RELATIONSHIP BETWEEN TECHNIQUES USED TO MONITOR TEACHING–LEARNING PROCESS AND STUDENTS' ACADEMIC PERFORMANCE IN PUBLIC SECONDARY SCHOOLS IN KAKAMEGA COUNTY, KENYA

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ABSTRACT

Academic success in secondary schools is normally attributed to the principal who is expected to use leadership styles in designing, implementing and monitoring activities to enhance students' academic performance. There has been a decline in the percentage of the Kenya Certificate of Secondary Education (KCSE) examination candidates from Kakamega County who were selected to join public universities. For instance, in the years 2011, 2012, 2013, 2014 and 2015, 15.53%, 14.84%, 13.47%, 12.61% and 12.34% of the candidates respectively were selected to join universities. This was contrary to the national rising trend where 7.18%, 9.12%, 10.17%, 12.11% and 12.72% of the KCSE candidates in the years 2011, 2012, 2013, 2014 and 2015 respectively were selected to join public universities. The declining trend could hinder the realization of Sustainable Development Goals and the vision 2030. This study intended to establish the relationship between techniques used by principals to monitor teaching–learning process and students' academic performance. The Transformational leadership model and a conceptual framework guided the study. Correlational and descriptive survey designs were adopted. Respondents were sampled by simple random sampling. Pre-testing of questionnaires for teachers and students was undertaken to ensure validity and reliability of the instruments. Data was collected from 30 principals, 199 teachers and 393 Form 4 students by use of questionnaire and interview schedule. Research experts determined validity of the instruments. Data was analyzed using descriptive statistics, frequencies, percentages, means, cross tabulation and Pearson's correlation. Hypotheses were tested through regression analysis at 0.05 level of significance. Results show that use of class prefects to mark teachers' lesson attendance, principals' visits to attend on-going lessons and students' reports during principals' forums positively correlate with students' performance. Regression analysis reveals that monitoring techniques explained 34.6% of the variation in academic performance. Techniques such as class prefects marking lesson attendance by teachers, principals' visiting and attending some lessons being taught and students reporting during principals' forum significantly relates to academic performance. It was recommended that principals should adopt techniques that significantly relate to academic performance. This study is significant to policy makers, principals, teachers and other education stakeholders in Kenya. The study would also form baseline information for future research.

Key words: Leadership Styles, Monitoring techniques, Teaching-learning process, Students' academic performance

1.0 INTRODUCTION

1.1 Background Information

Educational Management involves the application of management principles in designing, developing and effecting resources towards achievement of educational goals. The school principal has always been looked upon as a leader and so much is expected of him/her (Agkeampong, 2006). Complex organisations such as schools need principals with leadership characteristics to play an active role in steering the organisation towards excellence (Abrar et al., 2010). Educators and the general public have time and again expressed concern over factors that affect student performance in examinations. According to Agyeman et al. (2000), school managers' leadership positions demand from them knowledge of personnel management among others things. This is vindicated in the case of a school principal with the management responsibility of a team of teachers. The principal's skills in school management affects the behaviour of the school in terms of how teachers teach, how much students learn and the overall school academic performance. This is because the significant proportions of key decisions made within the schools are made with the consent of the principal (AITSL, 2011). Teachers play a crucial role in ascertaining whether or not the desired educational results are achieved. However, they expect to be provided with proper conditions for good teaching and learning (Akiba & Reichardt, 2004). Leadership increases the effectiveness and proficiency of management, sustainable performance and effective management of resources (Reed, 2005). Organisations and environment have changed rapidly over the past years and as a result a new type of leadership that is more or less democratic is needed in order to ensure survival of the organisation.

It is in schools that education takes place and it is there that the success or failure of the national educational objectives will be determined (Akyeampong, 2007). The most outstanding factor has to do with the organisational management of schools. For instance, Chimombo (2009) and Dakar Forum (2001) note that to improve students' performance, principals are required first to improve the management of the schools. This can be done by setting a clear vision for the schools and communicate this vision to the students, support its achievement by giving instructional leadership, provision of resources and being visible in every part of the institution. Lack of vision in the management of schools often leads to imbalance in the allocation and use of resources. This is why Day (2005) points out that, poor results in education are related to the resources allocated to it. If this parameter is not recognized, it becomes very difficult to understand why a school continues to perform poorly in national examinations. For example, in schools where parents are doing their best in providing school facilities such as science equipment, textbooks and physical structures, the blame for poor performance is shifted to teachers (Daaku, 2002). Both the government and parents expect teachers to perform better at their present levels of training. The whole issue of students' performance should be considered from the broad framework of input and output.

According to Donge (2003), one of the core functions of schools is to take human raw material (students) and convert them into something more valuable, as in employable adults. School executives are expected to apply appropriate management skills. The principal of any secondary school has a crucial obligation in discharging management duties in the school. Fafunwa (2010) indicates that school heads give their institutions images of their potentialities through drive, support and skills to mould the mission, vision and motto statements to an approximate reality. Maicibi (2005) observes that proper leadership styles lead to effective performance in learning institutions. Leadership effectiveness is most conveniently quantified by organisational outcomes. Malusu (2007) indicates that teachers and stakeholders' involvement in decision-making yield salutary results. It is also argued that such leadership results to better decisions and greater efficiency since issues are discussed extensively via open communication among people having varying viewpoints involved in participative set-ups (Cacippe, 2002).

The education system in Kenya is largely examination oriented. Kenya is ranked 17th out of 54 countries in terms of efficiency in education sector based on students' performance, staff turnover, motivation and managerial competence (World's Competitiveness Report, 2009). Educational leadership in the 21st Century is expected to be focused for purpose of realizing the SDGs and Kenya's vision 2030. This requirement necessitates a leadership that is clearly defined for all involved. Leadership involves authority and responsibility in terms of deciding the way ahead and being held responsible for the success or failure of achieving the agreed objectives. In a constantly changing social, economic, and technological environment, leadership is a more important attribute of management today than before (Musera, Achoka & Mugasia, 2012). The quality of education tends to be evaluated in terms of the number of students passing national examinations (Fatuma, 2003). Today, the demand for effective management of schools is rapidly taking centre stage more than ever before world over. This effectiveness is judged by the extent to which schools acquire the necessary instructional materials and teachers and how they provide a congenial organisational climate and generally meet the expectations of the society within which they are established (Okumbe, 1999). Therefore, the overall management of school rests with the principal working with and through the teachers to maximize their capabilities in the profession and achieve the desired educational goals.

The principals' visionary and moral contributions are expected to give teachers direction and the ability to perform in school. The principals have the endowment to create such conditions. Many scholars have attributed, to a large extent, the success of schools to those in the helm of leadership (principals) (Wanderi, 2010; Wangara, 2008 & Yusof, 2012). School principals have a responsibility of removing administrative constraints that may prevent teachers from maximizing their efforts in rendering services to students. It is vital to note that teachers are key players in the school and the major determinants of school performance. Management of teachers in schools is bestowed upon principals who have a responsibility of making and enhancing every teacher's productivity (Government of Kenya, 2007). These responsibilities can be carried out more

effectively with proper leadership styles for school leadership. According to Nandwah (2011), education stakeholders in Kenya have very high expectations of public secondary school principals because they believe that the success of a school is measured in terms of good performance in national examinations and the person responsible for this is the principal. World Bank (2008) observes that the increase in secondary education necessitates instituting responsible leadership in secondary education institutions. Performance of the academic institutions in meeting the goals and objectives of education in Kenya relies heavily on the type of leadership that prevails in the institutions and that many schools still perform poorly due to poor leadership. According to Mobegi, Ondigi and Oburu (2010), the quality of principals is a relevant indicator of quality in schools and therefore underscored the importance of head teachers in school administration. To this extent, the Ministry of Education introduced a Diploma in Educational Management for head teachers and principals. The course administered by the Kenya Education Management Institute (KEMI) is meant to equip the school managers with requisite skills to manage and implement educational policies in a contemporary education sector (MoE, 2011). According to Lumosi and Mukonyi (2015), performance in the KCSE national examinations gives a picture of the level and quality of education and that Kakamega East and Kakamega central sub-counties experienced fluctuating results showing average and unsatisfactory academic performance over a period of five years from 2010 to 2014. This study therefore sought to establish the relationship between principals' leadership styles and students' academic performance in Kakamega County of Kenya.

1.2 Statement of the Problem

Kenya like other countries is in the race to attaining Sustainable Development Goals (SDGs) alongside the Vision 2030 when it is expected to be an industrialized nation. Secondary schools continue to face pressure to attain these set standards and there are continuous efforts to improve student academic performance (World Bank, 2008). The GOK through KEMI has endeavoured to empower principals with requisite leadership skills for the management of schools to realize quality results in KCSE examination (MOE, 2007). Quality education in Kenya and world over is measured in terms of performance in examinations among other aspects. According to Kenya University and Colleges Central Placement Service (KUCCPS), in the years 2011, 2012, 2013, 2014 and 2015, there were 337,404, 357,488, 411,783, 437,762 and 449,246 candidates respectively registered for KCSE examination. Of these, 24,221; 32,611; 41,879; 53,010 and 57,150 of the candidates were selected to join Public Universities in Kenya in the years 2011, 2012, 2013, 2014 and 2015 respectively. This shows that 7.18%, 9.12%, 10.17%, 12.11% and 12.72% of the KCSE candidates in the year 2011, 2012, 2013, 2014 and 2015 respectively were selected to join public universities. It is therefore evident that the percentage of the KCSE candidates who were selected to join public universities increased from 2011 to 2015. According to the Kakamega County Director of Education, in the years 2011, 2012, 2013, 2014 and 2015 were 11,742, 12,154, 14,987, 16,205 and 18,741 candidates respectively registered for KCSE examination. Out of these, 1,824, 1,804, 2,018, 2,044 and 2,294 of the candidates were selected to join public universities in Kenya in the years 2011, 2012, 2013, 2014 and 2015 respectively. This indicates that the percentage of the KCSE

candidates who were selected for public university admission in the years 2011, 2012, 2013, 2014 and 2015 was 15.53%, 14.84%, 13.47%, 12.61% and 12.34% respectively. This shows that there has been a decline in the percentage of KCSE candidates from Kakamega County who were selected to join public universities. Despite the fact that nationally, there was a rise in the percentage of the KCSE candidates who were selected for admission to public universities as from 2011 to 2015, this was not the case in Kakamega County. The problem of declining performance in examinations is costly for any country and especially Kenya since education is a major contributor to economic growth. This trend if allowed to go on may easily hinder the realization of SDGs and the Kenya's vision 2030. This study therefore sought to establish the relationship between principals' leadership styles and students' academic performance in public secondary schools in Kakamega County of Kenya.

1.3 Objective of the Study

The objective of this study was to examine the relationship between techniques employed by principals in monitoring of teaching–learning process and students' academic performance in public secondary schools in Kakamega County of Kenya.

1.4 Research Hypothesis

This study was guided by the following hypothesis:

Ho_1. There is no significant relationship between techniques employed by the principals in monitoring teaching–learning process and students' academic performance in public secondary schools in Kakamega County.

1.5 Scope of the Study

This study covered the Relationship between techniques used by principals to monitor teaching–learning process and students' academic performance in public secondary schools of Kakamega County, Kenya. The study involved principals, teachers and Form 4 students as respondents. Data was collected by use of questionnaire and interview schedule.

1.6 Limitations of the Study

Since the study touched on the principal who was the chief executive officer in the school, some respondents were hesitant to give information and others were suspicious of the outcome of the study and therefore remained guarded in giving information in fear of victimization or discipline from the principal. This was overcome by the researcher informing them that the information was for the purpose of research only and would be treated with utmost confidentiality. In addition, it was overcome by corroborating data collected from different respondents. At the same time, to control the intervening variables, the researcher employed random sampling technique and collected data from a large proportion of respondents.

1.7 Significance of the Study

This study was expected to provide valuable insights on students' academic performance in public secondary schools to researchers in the education sector who can use the research findings to

analyze the relationship between principals' leadership styles and academic performance in secondary schools in Kenya. This knowledge may also be used in evaluating the success of principals as leaders and provide information to policy makers and implementers who can use the information in designing strategies that can be used to enhance students' academic performance by appointing appropriate teachers to become principals.

The findings of the study may also provide the stakeholders in education with data on how academic activities in secondary schools are being managed and in turn, the Government through the Ministry of Education may use the findings of this study to develop in-service training programmes at Kenya Education Management Institute (KEMI) that may help the principals adopt strategies that can enhance students' academic performance. The study may contribute through the development of new knowledge, which the teachers, principals and other education stakeholders can use to deal with the emerging issues in the students' academic performance.

1.8 Conceptual Framework

A conceptual framework that shows the interaction of variables in the relationship between principals' leadership styles and students' academic performance in public secondary schools in Kakamega county of Kenya guided this study. The framework also shows the indicators in the independent, dependent and intervening variables.

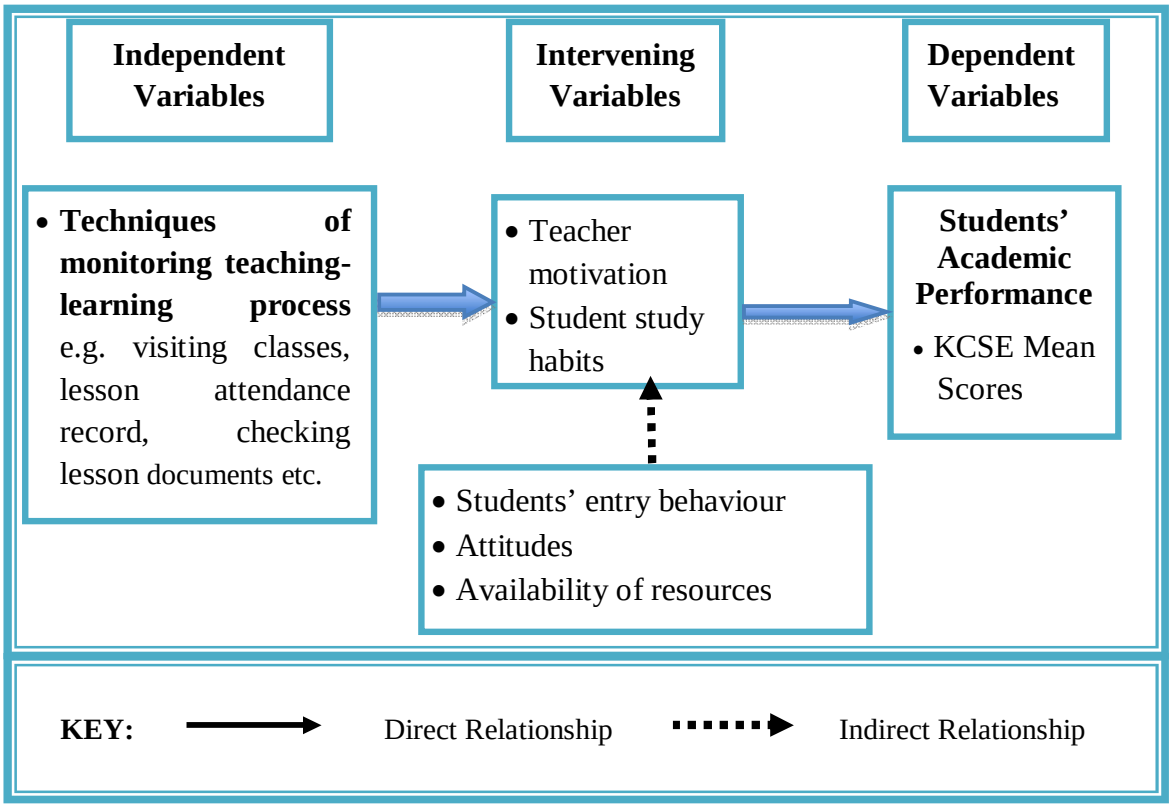

Figure 1.1: Relationship between Monitoring Techniques and Students' Academic Performance

Source: Researcher (2016)

Figure 1.1, displays interaction of variables between monitoring techniques and students' academic performance. The independent variable of the study is techniques used by principals to monitor teaching–learning process. This influences teacher motivation, teacher effectiveness and student study habits that in turn influence the dependent variable that is students' academic performance that was measured by the mean scores in KCSE examination. However, independent and dependent variables do not occur in a vacuum. They operate in an environment. Therefore, intervening variables such as attitude, entry behaviour and availability of resources come into play and indirectly affect the students' academic performance. These factors when they complement the techniques used to monitor teaching and learning process, there is higher teacher motivation, effective teachers and good student study habits which lead to good mean scores and quality student grades in KCSE examinations are realized. However, the opposite would occur when there is weak entry behaviour, negative attitudes and inadequate resources leading to low teacher motivation, less effective teachers and poor student study habits. This would ultimately contribute to poor academic performance in KCSE examinations.

2.0 MATERIALS AND METHODS

2.1 Research Design

Research design can be defined as the means to collect data in order to answer questions concerning current status of the subject in the study (Okoth, 2012 & Clark, 2009). This study employed both descriptive survey and correlational research designs. Descriptive survey is an observational research design that focuses on determining the status of a defined population, phenomenon, situation or condition being studied (Mugenda & Mugenda, 2003). It establishes the pertinent facts that the research intends to establish without necessarily manipulating the variables of the study (Koul, 1992). Blaxter (1996) states that survey research in education involves the collection of information from members of a group of students, teachers or other persons associated with the educational process and the analysis of this information to address important educational issues while Bell (1999) indicates that descriptive survey necessitates data collection to provide information about existing status of the phenomenon on the ground. According to Orodho (2009), correlational design analyses the relationship between variables with the aim of establishing between the dependent and independent variables. In this case, this study sought to establish relationships between principals' leadership styles and students' academic performance and making predictions once the survey identifies and accurately describes the important variables in the study. These designs were deemed appropriate because they have been found to offer to social scientists and educators a systematic and logical method of collecting data for the purpose of measuring sample characteristics and establishing facts that result in formulation of important principles of knowledge about populations that are too large to be observed directly (Mugenda & Mugenda, 2003; Koul, 1992).

2.2 Location of the Study

Kakamega County is located in the former Western Province of Kenya. It has a population of 1,660,651 and an area of 3,224.8 km². The county lies between latitudes 0^o 30' North and 0^o 25' North and longitudes 34^o East and 35^o East. It has 11 constituencies namely: Lugari, Ikolomani, Mumias East, Mumias West, Likuyani, Malava, Navakholo, Shinyalu, Butere, Lurambi and Khwisero (IEBC, 2013). It is located at an altitude of 1520 – 1680 metres above sea level. The rainfall amounts of the study area range from about 1200 mm p.a to 2000mm p.a which is bimodal (occurs in two rainy seasons that is the long and short rains) with the long rains occurring in the month of April to June while the short rains occurring in the month of October to November and short dry season in the month of December to March. The rainfall is distributed more or less uniformly throughout the year except for the month of November to February. The daytime temperature is about 30.8° C whereas at night they drop to up to 9°C with yearly mean of about 20.5°C. The main economic activity in the study area is agricultural with 62% of the population involved in agriculture and mainly crop farming especially maize and beans are grown in the area for subsistence use. Sugarcane farming is major agricultural activity of the area and mainly done on large scale. Animal keeping of local breeds and dairy farming is also practised on small scale. The County had 292 public secondary schools by the time of the conceiving this study.

2.3 Study Population

The target population refers to an entire group of individuals, events or objects having common observable characteristics from which a sample that is a smaller group is obtained. It defines the universe of the study (Ghauri & Gronhaug, 2005). This study targeted 292 public secondary schools in the accessible population of Kakamega County. Therefore, the target population of the study consisted of 292 principals, 1,984 teachers and 18,741 Form 4 students drawn from 292 public secondary schools in Kakamega County of Kenya bringing the total to 21,017 individuals. The accessible population consisted of 30 schools selected by random sampling from among the 292 public secondary schools.

2.4 Sample Size and Sampling Procedure

2.4.1 Sampling Procedure

Sampling is a procedure of selecting a smaller and manageable proportion of the accessible population and that simple random sampling represents the most basic statistical sampling technique (Nassiuma, 2000). According to Kothari (2004) and Kerlinger (1993), 10% to 30% of a population is considered a good representative of the population. In the current study therefore, 10% of 292 schools is 30 while 10% of 1984 teachers is 199. Sampling of schools involved writing names of all schools on pieces of paper and putting them in three containers, the first one with a series of high performing schools, the second one with average performing schools and the third one with low performing schools. The pieces were rolled into balls and thoroughly mixed. Ten pieces were then randomly drawn from each of the containers. This procedure was used because it

provided an efficient mechanism for capturing the heterogeneity that existed in the target population (Kothari, 2004; Mugenda & Mugenda, 2003; Blaxter, 1996). Therefore, 30 principals were sampled by purposive sampling because of the offices they held. Simple random sampling was used to give each of the teachers and students an equal chance to respond and involved the use of a table of random numbers to select 199 teachers and 393 Form 4 students to respond. The 393 Form 4 students were determined based on Israel (1992)'s formula of determining sample size as follows:

$$n = \frac{N}{1 + N(e)^2}$$ Where, n = sample size, N = population size, e = the level of precision

$$n = \frac{21741}{1 + (0.05)^2 21741} = \frac{21741}{55.35} = 393 \text{ Form 4 Students}$$

This formula was considered appropriate based on the view of Israel (1992), that the formula could be used to determine a sample size for a larger population of over 2000. Form 4 students were selected because they had more experience with the principals and teachers in their schools and could give necessary information compared to the students in the lower classes who had less experience. This sample was considered appropriate based on the view of Dooley (2001), which indicates that a study, which probes deeply into the characteristics of a small sample, will often provide more knowledge than a study, which looks at the same problem by collecting shallow information from a large sample. Stratified sampling was used to place schools into three categories depending on their status as High Performing (HP), Average Performing (AP) or Low Performing (LP) Schools.

2.4.2 Sample Size

According to Mugenda and Mugenda (2003), sample size refers to the actual number of subjects chosen as a sample to represent the population characteristics. Sample size is affected by such factors as the number of variables in the study, the type of research design, the method of data analysis and the size of the accessible population and one has to balance between systematic bias and sampling error (Ghauri & Gronhaug, 2005; Kothari, 2004; Israel, 1992). A total sample of 622 respondents was used in the study. In constructing the sample, the researcher embraced the recommendation of Kathuri and Pals (1993) that the minimum thresholds of 100 cases in major subgroups and 20 – 50 cases in minor subgroups was appropriate for surveys. Students and teachers in the schools constituted major subgroups from which 393 and 199 students and teachers were picked respectively. On the other hand, principals constituted a minor subgroup from which 30 principals were picked to respond. A sample size of respondents used is as shown in Table 2.1.

Table 2.1: Sample Size

Category of Respondents	Population (N)	Sample (n)	Percentage (%)	Sampling Technique
Principals	292	30	10.27	Purposive
Teachers	1,984	199	10.03	Simple Random
Students	21,741	393	1.81	Simple Random
Total	**24,017**	**622**	**2.59**	

Source: Kakamega County Director of Education (2014)

2.5 Data Collection Instruments

This study used both questionnaires and interview schedules as instruments for collecting data from respondents. Questionnaires were used to collect information from students and teachers. Questionnaires have the advantage of having everyone in each sampled category answer exactly the same questions, thereby making it possible for a few people to administer the questionnaires without affecting the validity and reliability of the instruments (Ghauri & Gronhaug, 2005). It was therefore possible to reach out on a large number of respondents quickly, easily and efficiently using questionnaires.

Interview schedules were used to collect data from principals who were helpful in clarifying issues that were not clearly articulated in questionnaires. As information collecting tools, interview schedules had inbuilt flexibility, since the interviewer had leeway to adapt to situations in order to get more detailed information. According to Kathuri and Pals (1993), interview schedules also outline questions that form the basis for and a guide to the interviewing process, which helps in standardizing the interview situation.

2.5.1 Questionnaire

Hague (1998) points out that primarily the role of questionnaire is to draw accurate information from the respondent. Bell (1999) noted that questionnaires are a good way of collecting certain types of information quickly and relatively cheaply. The questionnaire is an ideal instrument to gather descriptive information from a large sample in a fairly short time (Kothari, 2004). It can also be answered at the convenience of the respondent and picked at a later time. The self-designed questionnaires (Appendix 4 & 5) had both open ended and closed questions. The questionnaire was administered to teachers and students. The respondents were assured that the information given was only for the purpose of research and thus treated with utmost confidentiality. It was expected that the questionnaire would gather information from teachers on the relationship between monitoring techniques and students' academic performance.

2.5.2 Interview Schedule

According to Kerlinger (1993), an interview is a face-to-face interpersonal role situation in which one person, the interviewer, asks the person being interviewed the responded some questions. The interview schedule (Appendix 6) was used for the principals. Creswell (2012) observes that interviews allow an in-depth insight into how individuals comprehend and relate various aspects. The interview schedule was used to get clarification of issues, which needed probing as well as assess the accuracy and genuineness of responses given by teachers and students on the monitoring techniques and how they related to students' academic performance.

2.6 Pretesting of Instruments

Pretesting is the administration of data collection instruments with a small set of respondents from the population for full-scale survey. This is done to anticipate problems that may be encountered during data collection (Kothari, 2004). For instance, terminologies used in questionnaires and interview schedules may not be understood by respondents or information to be retrieved from documents may not be readily available. Reducing error to acceptable levels therefore requires pretesting of data collection instruments. According to Orodho (2009), piloting is carried out to ensure that there is clarity and efficiency of instruments before the real study is carried out. All instruments were pre-tested in three schools that were part of the target population for the study, but which had not been sampled for the actual study. By examining responses from subjects after piloting, shortcomings that may have posed threats to validity and reliability of the instruments were addressed. This improved the effectiveness of instruments in collecting relevant data.

2.6.1 Validity of Instruments

According to Zeller (1997), validity refers to the degree to which an instrument measures what it is supposed to measure for a particular purpose and a particular group. A measure is valid if it measures what it is intended to measure (Keeves, 1997). According to Bell (1999), validity tells us whether an item measures or describes what it is supposed to measure or describe. Research experts validated the instruments of data collection for this study. The instruments were presented to the research experts. The experts provided suggestions that were used to revise the instruments. In addition, pre-testing was conducted and the responses from the respondents were used to improve the items.

2.6.2 Reliability of Instruments

Quality of research is dependent on the consistency with which observations are made. Consistency is in turn dependent on the precision with which an observation is specified (Keeves, 1997). Kosecoff (1998) explained that reliability is the degree of consistency between measures obtained from a subject under similar conditions at different times. A reliable survey will provide a consistent measure of important characteristics despite background fluctuations. Test-retest method of estimating reliability was used to determine the reliability. This method administers the same instrument twice to the same group of subjects at different times.

A pilot study was done in 3 schools that were not part of the actual study. The researcher administered the instruments to the students, teachers and the principals. After a period of two weeks the researcher administered the instruments again to the same respondents. Responses from the respondents were thus checked for consistency. From their responses, changes were made to the structure and some of the questions. In the analysis, the sum variables were compared to a single variable (Bryman & Cramer, 2001). Cronbach's Coefficient, alpha, was computed to determine how the items correlated among themselves. This technique was preferred because it is known to give more conservative estimates of reliability as its estimated coefficient is always lower (Mugenda & Mugenda, 2003). It was better to underestimate than to overestimate reliability to avoid making erroneous conclusions. The reliability index of 0.82 and 0.87 was obtained for students' questionnaire and teachers' questionnaire respectively. According to Koul (1992) and Sarantakos (1998), reliability index of 0.70 or higher is acceptable threshold for making inferences in a study. Therefore, the reliability indices obtained were deemed appropriate for use in this study.

2.7 Data Collection Procedure

Data is collected for the purpose of gathering information to serve or prove some fact. This requires one to follow approved procedures which guarantee adherence to ethics during research. Central to these ethics is the need to inform respondents about the nature of information sought and the use to which it will be put. This enables respondents to make informed decisions to participate in the research.

A research permit was sought to enable unhindered collection of data in Kakamega County, Kenya. The schools were categorized into high performing schools (HPS), average performing schools (APS) and low performing schools (LPS). Schools were sampled based on their strata. The research instruments were piloted in 3 schools that were not part of the actual study. Principals in the sampled schools were approached where questionnaires were administered to the sampled teachers and students. Two research assistants were trained to be conversant with the study and involved in the collection of data. Interviews and document analysis were also used to collect data concurrently with the questionnaire administration. Confidentiality was upheld at all times. This was to address ethical issues during the research.

2.8 Data Analysis Procedures

The sources of analyzed data included questionnaires, interview schedules and school records. The quantitative data obtained from close-ended parts of the questionnaire were coded in readiness for standardized statistical analysis techniques using statistical package for social sciences (SPSS) version 20.0 for analysis. Qualitative data was transcribed, grouped into themes and sub-themes as they emerged. Quantitative data was analyzed by descriptive and inferential statistics and presented in form of frequency tables, means and percentages. For better interpretations and pictorial view, data was further presented as bar graphs and pie charts. Cross tabulations, Pearson's correlation

coefficient and Multiple Linear Regressions were used to establish relationships between variables. All statistical inferences were done at $\alpha = 0.05$.

3.0 FINDINGS AND ANALYSIS

3.1 Techniques used to Monitor Teaching-learning process

Information was sought from students, teachers and principals. Table 3.1 outlines the responses provided by the teachers.

Table 3.1: Techniques used to Monitor Teaching-learning process as reported by Teachers

Technique **n = 199**	Frequency (F)	Percentage (%)
Class prefects marking lesson attendance by teachers	165	82.9
Principal visiting classes the classes during lessons	160	80.4
Teachers filling the record of work covered book	141	70.9
Students reporting during principal's forums	136	68.3
Teachers signing class attendance list from head of department	50	25.1
Teachers signing class attendance list from head of subject	45	22.6
Principal visiting and attending lessons being taught by teachers	28	14.1

Source: Field data (2016)

Results in Table 3.1 show that 165 (82.9%) of the teachers reported that class prefects in their schools marked lesson attendance by teachers while another 160 (80.4%) of them reported that prinipals in their schools walked around the classes during lessons. At the same time, 141 (70.9%) of the teachers reported that teaching-learning process in their schools was monitored by looking at record of work covered book filled by teachers while 136 (68.3%) of the teachers indicated that students reported on the progress of teaching-learning process during principal's forums. Furthermore, 50 (25.1%) and 45 (22.6%) of the teachers indicated that teahers signed class attendance lists from the heads of departments (HOD) and heads of subjects (HOS) respectively while 28 (14.1%) of the teachers reported that principals visited and attended lessons being taught by teachers in order to monitor how the process was going on. During interview, principals concured with these findings. One of them said, "Nowadays, prefects are involved in management. They really help me in monitoring lesson attendance by teachers." Another principal revealed, "As a principal, you can not work without visiting classes to know what is going on. I make rounds every morning to see who is in class and who is not." Another principal said:

> "I monitor teaching/learning process in this school by looking at the filled record of work books which is handed over to my office every Monday by heads of department. I go through them, make my remarks and return to them on on Tuesday."

One other principal revealed, "I have designed lesson attendance forms which are with the subject heads. They are signed by teachers after every lesson." At the same time, this study established from students, techniques employed by the principals to monitor teaching-learning process. See the findings in Table 3.2 that follows.

Table 3.2: Techniques used to Monitor Teaching-learning process as reported by Students

Technique **n = 393**	Frequency (F)	Percentage (%)
Class prefects marking lesson attendance by teachers	356	90.6
Students reporting during principal's forums	229	58.3
Principal visiting classes the class during lessons	183	46.6
Principal visiting and attending lessons being taught by teachers	39	9.9

Source: Field data (2016)

Results in Table 3.2 show that 356 (90.6%) of the students reported that their class prefects marked lesson attendance by teachers while 229 (58.3%) of them indicated that they reported in the principal's forums on how teaching-learning process went on in their classes. At the same time, 183 (46.6%) of the students reported that principals in their schools walked around the classes during lessons to ensure that teaching-learning process went on while only 39 (9.9%) of the respondent students indicating that their principals visited their classes to attend lessons being taught by teachers. During interview one of the principals said, "Monitoring whether teachers get to class or not is perfectly done by class prefects. They simply tick when teachers attends the lesson on form issued by the academic master on weekly basis." One principal indicated:

> "I have a two hour principal's forum every Saturday as from 6.30am to 8.30 am where I get reports directly from the students on progress of various programmes of this school including academic. If I am absent, my deputy conducts the forum."

It is clear from the findings that the teaching-learning process was monitored by a myriad of techniques. Principal, teachers and students generally acknowledged the fact that teaching-learning process is monitored but each school had its own techniques of doing it. Another principals said, "Class prefects have also been empowered to look for teachers who delay to come to class." Another principal revealed, "I personally ensure that missed lessons were recovered either by subject teacher or a member of the department who can teach it." Another principal said:

> "I also sample and check exercise books to ensure that indeed the students write notes. Even if I do not understand the content, from the dates, I would establish whether the teaching and learning was going on well. It is not all about teachers, even students who do not write well, I punish them."

Another principal indicated, “For teachers to perform well you must be strict to them. They are very tricky, they may be going to class but do not teach.” One other principal added, “I even have a mechanism of checking marked scripts to ensure that it is marked objectively. With the current mean score era, some teachers may just award marks so that they are not questioned.” One other principal during interview said:

> “After every examination, we have meetings where each teacher especially thoase with low mean scores explain to colleagues the performance giving his/her plans of improvement……. I always follow up teachers who miss lessons to make up for them…….I use departments to recover lessons by asking any teacher in the department to go the lesson.”

These findings show that principals were committed to ensure the teaching-learning process goes on as planned in order to achieve the set objectives. They employed various techniques at their reach to ensure this happens. Whether those techniques bared fruit is in terms of enhancing good academic performance is the question that needed interogation by this study.

3.2 Relationship between Techniques used to Monitor Teaching–Learning Process and Academic Performance

3.2.1 Pearson’s Correlation

This study further carried out correlations between techniques used in the monitoring the teaching-learning process and students’ academic performance. The findings are shown in the table that follows.

Table 3.3: Correlation between Students’ Performance and Techniques used to Monitor Teaching-learning process

Monitoring Technique	N	Correlation Co-efficient (*r*)	Sig.
Class prefects marking lesson attendance by teachers	199	0.061	0.023*
Principal visiting classes the class during lessons	199	- 0.132	0.000*
Teachers filling the record of work covered book	199	0.255	0.000*
Students reporting during principal’s forums	199	0.472	0.000*
Teachers signing lesson attendance list from head of department (HOD)	199	0.116	0.000*
Teachers signing lesson attendance list from head of subject (HOS)	199	0.058	0.030*
Principal visiting and attending lessons being taught by teachers	199	0.228	0.000*

Principal counterchecks to ensure that all practicals/projects are done	199	- 0.463	0.000*
Principal checks students' notes in some subjects	199	0.077	0.127

* Significant at p<0.05 Source: Derived from Field data (2016)

Results in Table 3.3 shows that there were significant correlations at $p<0.05$, between the students' academic performance and techniques used by principals to monitor teaching-learning process in their schools which were: class prefects marking lesson attendance by teachers, principal visiting classes the class during lessons, teachers filling the record of work covered book, students reporting during principal's forums, teachers signing class attendance list from the HOD, teachers signing for lesson attendance list at the HOS and principal visiting and attending lessons being taught by teachers except principal checking students' notes in some subjects which was not significant. However, it is worth noting that principal visiting classes the classes during lessons and principal counterchecking to ensure that all practical/projects are done had negative correlation coefficients, *r*. This implied that principals putting more emphasis on these techniques were likely to record lower mean scores in students' academic performance than those that put less emphasis on these techniques. On the other hand, class prefects marking lesson attendance by teachers, teachers filling the record of work covered book, students reporting during principal's forums, teachers signing lesson attendance list at both the HOD, teachers signing lesson attendance list at both the HOS and principal visiting and attending lessons being taught by teachers had positive correlation coefficients. This implies that principals putting more emphasis on these techniques were likely to record higher mean scores in students' academic performance. At the same time, it should be noted that the correlation coefficients, r, were generally low. This means that although significant, the relationships between the monitoring techniques and students' academic performance were generally weak.

3.2.2 Regression Analysis

According to Kerlinger (1993), multiple regression attempts to determine whether a group of independent variables together predict a given dependent variable. This study adopted the backward elimination method, which allows for the selection of variables for inclusion in the regression model that considered all independent variables and then eliminated those variables that did not make any significant contribution to prediction of the dependent variable (Gall, Gall & Borg, 2007; Hair et al. 2009). Under this objective, this study sought to establish the relationship between techniques used to monitor teaching-learning process and students' academic performance. The relative effects of the nine regressor [independent] variables: principal visiting classes during lessons, principal visiting and attending lessons being taught by teachers, teachers signing class attendance list with head of subject, teachers signing class attendance list with heads of department, teachers filling the record of work covered book, students reporting during principal's forum, principal counter-checking to ensure that all practicals/projects are done and principal checking students' notes were

considered together in one equation as predictors of [Y] students' academic performance (dependent variable). The main objective of using multiple regression analysis for estimation was to explain the factors that had a significant effect on students' academic performance (Kerlinger, 1993; Gall, Gall & Borg, 2009).

The general statement of relationship was of the form:

$Y = f(X_1, X_2 \ldots\ldots\ldots X_n)$.

Where Y was the criterion variable while $X_1, X_2 \ldots\ldots\ldots X_n$ represented the explanatory variables.

In order to establish the relative contribution of each of the monitoring techniques on academic performance, multi-linear regression model was specified. Results discussed below were the output of a simultaneous regression method, which required the researcher to specify the set of predictor variables that made up the model. The success of the model in predicting the criterion variable was then assessed.

The general functional form of the model for this study was:

$Y = a_1X_1 + a_2X_2 + a_3X_3 + a_4X_4 + a_5X_5 + a_6X_6 + a_7X_7 + a_8X_8 + a_9X_9 + c$

Where:

Y = Academic performance (KCSE mean scores)

X_1 = Class prefects marking class attendance by teachers

X_2 = Principal visiting classes the classes during lessons

X_3 = Principal visiting and attending lessons being taught by teachers

X_4 = Teachers signing class attendance list with heads of subject

X_5 = Teachers signing class attendance list with heads of department

X_6 = Teachers filling the record of work covered book

X_7 = Students reporting during principal's forum

X_8 = Principal counterchecking to ensure that all practicals/projects are done

X_9 = Principal checking students' notes

c = Constant; and $a_1 \ldots a_9$ are regression coefficients.

Results

The model entered nine explanatory variables for a linear relationship with students' academic performance. These were principal visiting classes during lessons, principal visiting and attending lessons being taught by teachers, teachers signing class attendance list with head of subject, teachers signing class attendance list with heads of department, teachers filling the record of work covered book, students reporting during principal's forum, principal counter-checking to ensure that all practicals/projects are done and principal checking students' notes.

Model		Sum of Square	df	Mean Square	F	Sig
1	Regression	105.102	3	35.034	4.126	0.013
	Residual	1664.236	196	8.491		
	Total	1769.338	199			

Mode	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.539	.346	.330	.125

Independent Variables	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta (β)		
(Constant)	3.191	.148		21.601	.000
Class prefects mark class attendance by teachers	.294	.090	.234	3.277	.001
Principal walk around the classes during lessons	-.523	.089	-.439	-5.903	.000
Principal visit and attend lessons being taught by teachers	.271	.108	.200	2.517	.003
Teachers sign class attendance list with Head of Subject	.143	.183	.126	.778	.438
Teachers sign class attendance list with Head of Department	-.495	.179	-.455	-2.774	.006
Teachers fill the Record of Work Covered book	.010	.067	.010	.148	.883
Students report during principal's forum	.651	.063	.641	10.264	.000
Principal counterchecks to ensure that all practicals/projects are done	-.463	.167	-.408	-2.595	.000
Principal checks students' notes in some subjects	.077	.028	.068	.432	.127

Dependent variable: KCSE mean scores Source: Derived from Field data (2016)

The F-ratio (between groups mean square) was 4.126 while the p-value was 0.013. The probability of F-ratio (p-value) of 0.013 was less than the significance level (critical value) of 0.05. An

examination of the ANOVA table, in this model revealed that the explanatory power of the model was high ($F = 4.126$, $p < 0.05$); thus, the model could not be rejected.

The model had the R-Square (R^2) value of 0.346. This means that the independent variables (principal visiting classes the classes during lessons, principal visiting and attending lessons being taught by teachers, teachers signing class attendance list with head of subject, teachers signing class attendance list with heads of department, teachers filling the record of work covered book, students reporting during principal's forum, principal counter-checking to ensure that all practicals/projects are done and principal checking students' notes) explained 34.6% of the variation in students' academic performance.

The prediction equation for the students' academic performance (Y) is:
Y = 0.234 [class prefects marking lesson attendance by teachers] – 0.439 [principal visiting classes the classes during lessons] + 0.2 [principal visiting and attending lessons being taught by teachers] – 0.455 [teachers signing class attendance list with heads of department] + 0.641 [students reporting during principal's forum] – 0.408 [principal counter-checking to ensure that all practicals/projects are done] + 3.191.

This implies that examination meanscore is predicted to increase by 0.234 when class prefects marking lesson attendance by teachers goes up by one, decrease by 0.439 when principal visiting classes the classes during lessons goes up by one, decrease by 0.2 when principal visiting and attending lessons being taught by teachers, decrease by 0.455 when teachers' signing class attendance list with heads of department goes up by one, increase by 0.641 when students reporting during principal's forum goes up by one and decrease by 0.408 when principal counter-checking to ensure that all practicals/projects are done increases by one.

The standardized beta coefficients (β) took on both negative and positive values. However, olny three variables namely: classprefects marking teachers lesson attendance, principal visits to attend lessons being taught by teachers and students reporting during principals' forums significantly influenced students' academic performance ($p < 0.05$). These findings reveal that this model is applicable in the schools which means that techniques employed by the principal to monitor teaching-learning process in the school determine students' academic performance of that particular school. The findings show that techniques that involved the use of students in reporting on teaching-learning process were more likely to enhance academic performance compared to techniques that involved the principal to physically supervise the teaching-learning process. This could be because students are the actual day to day participants in the process.

These findings are in agreement with Chepkonga (2006) and Okumbe (1999) who indicated that monitoring of teachers by the principal improves educational effectiveness including academic performance. The findings are in line with Chapman et. al. (2009) who indicated that the principal

should use monitoring methods that enhance mutual trust with teachers since good relationship between the principal leads to improved teaching-learning process while Olivia (2004) conceptualizes that monitoring of teachers helps to improve instruction. At the same time, the findings concur with Wangara (2008) who suggests that principals need to supervise teachers to ensure that they strictly follow the curriculum and Toto (2006) who indicated that for teaching and learning to function efficiently, there muct be proper system of monitoring teachers and the general teaching-learning process.

4.0 CONCLUSIONS AND RECOMMENDATIONS

4.1 Conclusions

Based on the findings, this study concluded that there was a significant relationship between techniques employed in monitoring teaching/learning process and students' academic performance namely: class prefects marking lesson attendance by teachers, teachers filling the record of work covered book, students reporting during principal's forums, teachers signing lesson attendance list at both the HOS/HOD and principal checking students' notes. The techniques employed by principals explained 34.6% of the variation in students' academic performance among the LPS, APS and HPS. Class prefects marking lesson attendance by teachers, principal visits to attend lessons being taught by teachers and students reporting during principals forums were good predictors of academic performance.

4.2 Recommendations

Based on the findings and conclusions, this study recommends that:
Secondary school principals should put emphasis on techniques that enhance students' academic performance. These techniques include: class prefects marking lesson attendance by teachers, students reporting during principals' forums and principal visiting and attending lessons being taught by teachers.

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