



The Extent to which Adherence to Policy in Maintenance of Physical Resources Impacts on KCSE Performance in Public Secondary Schools in Kiminini Sub-County

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Abstract: *Physical resource management is a crucial aspect of the overall management of a school. A direct correlation exists between quality of school facilities provided and performance in National examinations. This study assessed the extent to which adherence to Policy in Maintenance of Physical Resources Impacts on KCSE Performance in Public Secondary Schools in Kiminini Sub-County. A descriptive survey design was used. The research instruments were questionnaires for the head teachers, teachers and students. An interview schedule for the Sub-County Director of Sub-County (SDE) and an observation schedule to assess the status of physical facilities in public secondary schools in Kiminini Sub-County were used. The target population comprised of head teachers, teachers and students of all the 57 public secondary schools in Kiminini Sub-County. Stratified random sampling was used to select 26.7% (15) head teachers, convenience sampling to select 60 teachers and systematic random sampling to select 300 students from the 15 secondary schools. Validity and reliability of the research instruments was determined through pilot-testing. The study found out that non-adherence to policy on maintenance of physical facilities impacts greatly performance in schools. The study concluded that for effective management of the scarce physical and material resources, participatory management through delegation and established policies are essential for ensuring that school resources are well managed to achieve school objectives. The study recommends that the government needs to monitor policies that facilitate effective and efficient management of physical and material resources. Significantly this study will guide policy enhancement on prudent management of school resources.*

Keywords: *Policy, Maintenance, Physical Resources, KCSE Performance, Impact.*

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1. Introduction

Education is universally recognized an investment of human beings and a valuable resource for economic benefit of any country. The Governments all over the world committed themselves to the provision of Education

for All (EFA) at Dakar Senegal in 2000 (UNESCO, 2003). Education does not exist in a vacuum but in an environment structured of physical facilities and material resources that are used in teaching and learning to prepare students for summative evaluation. According to World Bank (2006), public examinations in Kenya serve the

following purposes: selection of candidates for educational opportunities and employment, certification of achievements of candidates, control and delivery of curriculum in schools, monitoring educational standards and reporting on school effectiveness. These roles suggest that examination results as indicated by school performance in terms of mean scores are indicators of institutional efficiency and effectiveness. The Kenya Government has recognized the strategic importance of improving the overall Education level of Kenyans by commitment to international conventions such as Education for All (EFA), MDGs and the fact that Vision 2030 is anchored on education as a social pillar. The specifications given for the establishment and management of physical and material resources in public secondary schools are stipulated in the laws and policies that govern the country's Education system. The Education Act Cap 211(1967) section 19 outlines regulations that guide the conduct of schools. The adopted 8-4-4 system of Education in 1985 following the recommendation of the Presidential working party on the establishment of the second University (ROK, 1981) introduced a broad-based curriculum at all levels. This led to a more diversified and specialized programs that required effective planning of physical facilities and material resources (Onyango, 2001). Organization, co-ordination and supervision are required in scheduling the use of space, equipment and relating availability to effective teaching and learning. Communication and influence is necessary to do extensive evaluation of the use to which present facilities and equipment are put to use (Olutola,2000).

Report on the commission of inquiry into the education system in Kenya (ROK, 1999) pointed out that the quality and adequacy of resources have direct bearing on quality as they determine the implementation of the curriculum. The commission further noted that there are serious disparities in resources making management and content delivery difficult. The commission recommended that schools be provided with adequate facilities, teaching and learning resources and managerial skills be improved in order to enhance performance in schools. To achieve the Goals and Objectives of education the MOE is targeting the Construction / Renovation of physical facilities in public learning institutions. (Sessional paper No. 1 2005).

The introduction of Free Primary Education (FPE) in 2003 and Free Secondary Education(FDSE) in 2008 that finances learning and teaching materials has increased Gross Enrollment (GER) from 38% in 2007 to 42,5% in 2008 (RoK, 2009).The government noted in its first annual progress report on implementation of Vision 2030 that lack of adequate infrastructure at all levels of Education undermines effort to access and equity to Education hence making it difficult to address the existing disparities (Turana,2010).The challenges of overstretched facilities due to increasing enrollment calls for efficient management of available resources to ensure provision of

infrastructure development, improvement of teaching/learning facilities and improvement of boarding facilities (KESSP 2005-2010) aimed at improving school performance. Ekundayo (2010:191) noted that; "Secondary Education can only be productive if there is effective and efficient management of human and material resources in the system".

MOE Inspection manual for educational institutions (2000) states that the learners output is determined by such factors as sanitation facilities, availability of physical resources, effective utilization, well maintained and well trained teachers. Over the years school managers have emphasized that physical facilities available for academic and non-academic activities are grossly inadequate. Available facilities in most schools may as well be regarded as obsolete in terms of quality and quantity since they were meant for low populations but now the enrolment and the number of academic programs have increased. This calls for efficient and effective management of physical and material resources to be an integral part of school management so as to improve school performance (Sela, 2001). Inadequacy of both human and physical resources has been identified as factors that affect performance (Eshiwani, 1993). Performance in secondary examinations determines who would transit to the next cycle of Education and training.

The quality of Education is mostly measured by the level of performance in National examinations. Disappointingly, secondary Education is characterized by poor performance in National examinations and it is hoped that this challenge will be addressed through strengthening managerial capacities of school managers to optimize use of resources and improve performance (RoK, 2005). Kiminini Sub-County is not exception; it has continued to perform below expectation in KCSE examination. Available information from the Sub-County Director 's office indicate that the sub-County mean has been ranging between 3.2 to 4.9 (Kiminini Sub-County analysis 2018).

For the last 5 years the bulk of the students scored grade D+ and below which totals to 16,996 (55.01%) translating to over half of the students from 2015 to 2018. The percentage increases towards the poor grades while the quality grades A and A- gives a total of 383(1.24%) students, fewer compared to grade E in each year.

This scenario has raised a lot of concern. Nonetheless good performance in public examinations like KCSE does not just come by; governments, communities and individuals use efficiently managed resources to enable students learn and perform well in examinations. According to UNESCO (2005), availability or lack of educational resources determines the quality and quantity of Education people receive.UNESCO,2007 asserts that it is generally known that teachers, materials and school space have an obvious impact on performance of students. Aoki et al (2002) identifies unsuitable learning

environments and inadequate resources as factors contributing to poor performance.

1.2 Statement of the Problem

Physical facilities constitute a major component of school conditions that promote teaching and learning for improved performance. A close relationship exists between the management of physical resources and the academic achievements of students. Secondary Schools Kiminini Sub-County have been performing below expectation in National examinations. For instance the KCSE performance in the last three years 2016, 2017 and 2018 the mean score has been below 4.5 (Kiminini Sub-County Analyzed Results, 2019). This has raised concern among the stakeholders and educationists as evidenced during the fifth Annual Kiminini Sub-County Educational and advancement Resource (GEAR) conference held in 2018 on what would be contributing to the dismal performance in schools in the Sub-County. School performance in KCSE has been attributed to among other factors inadequate resources, poor infrastructure and poor utilization of existing resources. Since management of resources is critical in achieving school objectives, the study therefore sought to assess the extent to which adherence to policy in maintenance of physical resources impacts on KCSE performance in public secondary schools in Kiminini Sub-County.

1.3 Objectives of the Study

The study was guided by the following objective:-

To establish the extent to which adherence to policy in maintenance of physical resources impacts on KCSE performance in Public Secondary Schools in Kiminini Sub-County.

1.4 Research Questions

The study was guided by the following research question:

To what extent does adherence to policy in the maintenance of physical resources affect KCSE performance in public secondary school in Kiminini Sub-County?

1.5 Significance of the Study

The study may provide information on, the need to adhere to policies on establishment and maintenance of physical and material resources and may expose the challenges faced by school managers in physical and material resource management in public schools. It may also assist policy makers at the MOE to develop policy framework on disbursement of infrastructure funds to schools in Kenya.

1.6 Theoretical Framework

The study was grounded on Henri Fayol's (1841-1925) theory of management. Fayol, a French industrialist, published a book on General and industrial management in 1916 in which he outlined 14 principles of management. Five of the principles are concerned with human relations, one emphasizes production and efficiency and the remaining eight are directed toward administration of the organization. According to Fayol, management comprises five functions that are planning, organizing, commanding, coordinating and controlling. The theory viewed management as placing the activities of forecasting and planning at the centre of school management. Planning involves studying the future and arranging the operations; to organize means to build up material and human resources, organizing means to mobilize resources, to command means to make the staff to do their work; to coordinate means to unite and correlate all activities while controlling is to ensure that everything is done in accordance with the laid down rules and regulations (Okumbe, 2001).

The success of any institution highly depends on the ability of the management to procure and efficiently use the available resources. An institution's effectiveness relies on its ability to utilize its scarce resources in the most efficient manner in order to produce maximum quality results. In the study, a school is managed as an organization where the manager is the school principal and the BoM. The management formulates school policies, goals and objectives that will form a basis for achieving the overall goals of the MoE. For the realization of the school goals the management is charged with the responsibility of sourcing and allocating funds for the procurement of appropriate learning and teaching resources. The school Principal through forecasting and planning will draw up plans for the construction, renovation and improvement of physical resources. Through organizing and coordinating the principal will ensure that the teachers and students use given schedules that allocate time and physical resources to use in order to achieve educational objectives. Through coordination he will mobilize staff in using the teaching/learning materials effectively for the achievement of the school objectives. Through controlling, the principal will ensure that the available funds are allocated equitably based on prioritized physical and material resource needs (Ayaga, 2010).

This will ensure due focus on the actual teaching and learning materials. The principal as the chief executive will ensure that everything is done as per set procedures and policies such as requisitioning of teaching and learning resources from the user department and issuance of the same within stipulated time frame. The manner in which the management elements and policies are applied will determine how effectively and efficiently the limited resources are acquired, utilized and maintained in order to

achieve enhanced performance in public secondary schools in Kiminini Sub-County.

2. Literature Review

2.1 Policy in Maintenance of Physical resources in Public Schools

Maintenance is an aspect of school management that is generally overlooked and yet it influences teaching and learning outcomes of students. There are policies at all levels that give specifications on how maintenance in schools should be carried out. Obioda (2006) states that principals must be fully concerned with the physical environment and other facilities around the school. Dilapidated buildings, leaking roofs, abandoned projects, overgrown trees and lawns dingy and dark buildings have a demoralizing effect on people especially the youths. Some of the school facilities are architecturally obsolete and therefore cannot contribute to quality education.

The maintenance of new buildings, renovating and modernizing the old ones require considerable expertise and commitment to integrate maintenance into the management of the school. Changes in weather conditions and lack of maintenance practice contribute to aging and deterioration of school buildings, grounds and equipment. Asiabaka (2008) states that school managers and teachers who use school facilities lack knowledge for facility maintenance management which involves planning, organizing, co-ordination and controlling. A study by Sarel (2009) on facilities maintenance management practice in large public schools in Texas, USA found that American schools suffer from inadequate physical conditions by becoming 'older' and therefore requires effective facility maintenance management plan. The study further established that a poor quality of facility management practices exist in large public schools in Texas. The study further pointed out that schools that follow guidelines set by US department of Education tend to have comparatively more detailed and contemporary information about their facility's condition and therefore able to carry out projected maintenance needs of the school.

Kenya available literature confirm the importance of facility maintenance. Nzoka (2006), Bakhada (2004) state that facility maintenance entails the provision of a clean and safe environment for teaching and learning. Further research by Ayaga (2010) assessed the methods used by principals to maintain facilities and found out that most principals did not have a maintenance management plan but used painting as a way of maintaining physical facilities. The study did not find out how facility maintenance is planned nor establish whether it had influence on KCSE performance. The current study

sought to establish whether schools adhere to policy on maintenance of physical resources and its impact on KCSE performance in public secondary schools in Kiminini Sub-County.

3. Methodology

The research adopted a descriptive survey design in conducting the study. The study population comprised of 56 head teachers managing 56 public secondary schools inclusive of the 20,172 students, 823 teachers and the Sub-County Director of education, Kiminini. All public Secondary Schools receive Free Secondary Education fund which subsidizes tuition costs.

Stratified random sampling was used to select 15 schools from the target population of 56 public secondary schools in Kiminini Sub-County representing 26.7% of the schools. The schools were stratified according to type of schools. There was only 1 mixed day and boarding, 4 boys boarding, 4 girls boarding and 47 mixed day schools. All the boarding schools and the mixed day and boarding were all selected while random sampling was used to select 7 schools from the 47 mixed day schools giving a sample of 15 schools. Orodho (2008) states that stratified sampling is a technique used to draw a sample from a population that is not homogenous. Random sampling can be used to select from the stratum to enable every participant to have an equal and independent chance of being selected as a member of the sample. According to Mugenda and Mugenda (1999), for descriptive survey 10% is enough sample to be used but the researcher decided to use 26.7% of the schools to enhance representation. The head teachers of the 15 schools were included in the sample. Convenience sampling was used to select 4 teachers from 15 schools giving 60 teachers. For convenience sampling the researcher administered the questionnaire to any two male and female teachers who entered the staffroom at tea break. Orodho (2009) states that in convenience sampling the researcher simply selects a required number from cases that are conveniently available. For the students the researcher used systematic random sampling based on the class registers. If the sample size required will be 5 students from a class of 50, the sampling constant will be:

$$\text{Sampling constant, } K = \frac{\text{population}}{\text{Sample size}} = \frac{50}{5} = 10$$

K^{th} or 10^{th} student's name was selected; K had a range of 1-10 students on the list. The researcher randomly selected to start with any of the numbers i.e. 1st, 2nd, 3rd10th. If it was 1st then the sample included (10, 20,30,40,50 (Orodho 2009). The total students from the 15 sampled schools was 5 students x 4 classes x 15 schools giving a total of 300 students. The Sub-County Director of Education was included in the study to give more information.

The sample size therefore consisted of 15 principals, 60 teachers, 300 students and the SDE. The data is summarized in table 1.

Table 1 Study Sample

Respondents	Number	Percentage
Principals	15	26.7%
Teachers	60	16%
Students	300	5.5%
SDE	1	100%

The study utilized questionnaires and interviews as the main tool of data collection. Observation schedule was also used. The study used interview schedule for the Sub-County Director of Education, questionnaire were utilized for the head teachers, teachers and students.

Before data collection, the researcher obtained an introductory letter for obtaining permit from Kisii University, School of post Graduate Studies. Thereafter the researcher sought for permission from the Ministry of Higher Education, Science and Technology through the National Council for Science and Technology for a research permit (NACOST). The researcher undertook a preparatory survey in the schools in Kiminini Sub-County, to accustom to the study areas and also make appointment with the identified persons. The researcher further obtained formal authorization to conduct research in the schools within the Sub-County from Kiminini Education office. Once through with the relevant authorization the researcher visited the schools to book appointment with the principals. During this visit the researcher and the principal established the convenient time, suitable days and procedure to be followed in conducting the study.

The data collected from the field was sorted, coded and keyed into statistical packages for social sciences (SPSS) version 22. SPSS was used in order to simplify the analysis process and ensure high level of accuracy. Qualitative data from interviews, open-ended questions and observation schedule is usually massive, descriptive, highly detailed and subjective (Orodho, 2008).It was analyzed according to themes, categories and patterns pertinent to the study. Quantitative data was analyzed using descriptive statistics and results on averages,

percentages presented through charts, graphs and tables. There are descriptions accompanying each table and figure.

4. Results and Discussion

4.1 Policies on Maintenance of Physical Resources and implication to Academic performance

The study sought to assess the extent to which principals adhere to policies that guide the maintenance of physical resources and its implication to academic performance of students. The findings were analyzed under the following items: Types of maintenance plans in schools, how maintenance programme is managed in schools, ways schools manage the maintenance of physical and material resources, role of students in maintaining physical and material resources, challenges in maintenance of physical and material resources, and suggestions on overcoming challenges in maintenance of school physical facilities. The data obtained is presented in the following sections.

Types of Maintenance Plans in Schools

The head teachers were asked to indicate the type of maintenance plans that they had put in place in their schools.

The data obtained is presented on figure 1.

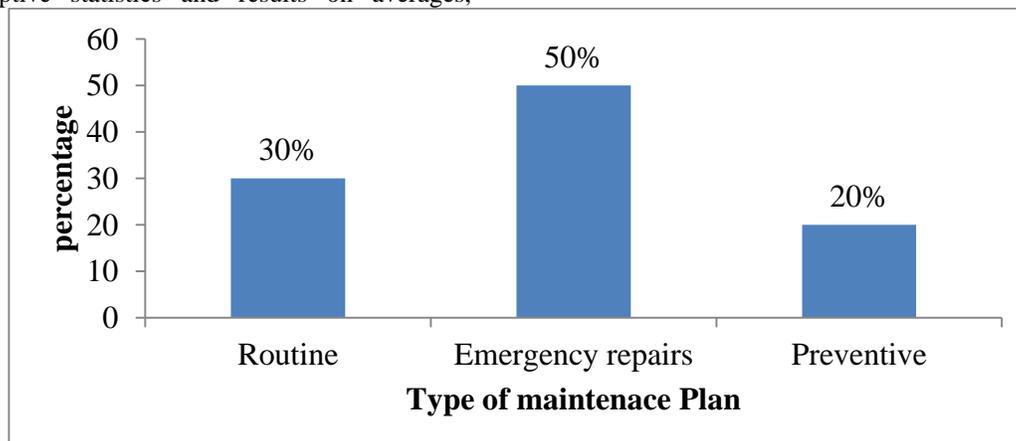


Figure 1: Types of Maintenance plans in Schools

Data presented in figure 1 show that majority of the schools (50 %) had emergency maintenance plans, less than a half had routine maintenance plans (30%), while few schools had preventive repair plans (20%). Routine maintenance is a type of repair carried out periodically as planned, while preventive maintenance is carried out on school facilities to prevent breakdown and ensure optimal performance of the physical resource while emergency maintenance is carried out when a facility breaks down and requires urgent steps to rectify the situation.

The findings reveal that school principals have not adopted a common plan in maintaining school resources a factor that may be attributed to inadequate funds to implement policy directives on required standards and lack of maintenance culture in schools in Kiminini Sub-County. In the absence of a common plan supervised by the school BoM and MoE of education, there are bound to be disparities in the maintenance of physical resources with some schools having poorly maintained labs, libraries and other facilities used for effective teaching and learning. This could be viewed as a failure by the ministry of Education to reinforce established policy directives on

minimum standards in relation to physical resources. Policy is defined as authoritative communication of expected behavior for individuals in certain positions under specific conditions. Policies should direct that all schools follow a common maintenance plan for uniformity so as to improve physical resource management, improvement programmes and secure adequate resources. According to Asiabaka (2008) facility maintenance plans in schools was haphazardly addressed and there was need for the government to address the issue of development and implementation of minimum standards for facilities management in order to enable schools achieve academic performance.

Management of Maintenance Programmes in Schools

The head teachers were asked how the maintenance programme was managed in their schools. Based on the data obtained, the researcher viewed the management of the maintenance programme as a process which is summarized on figure 2.

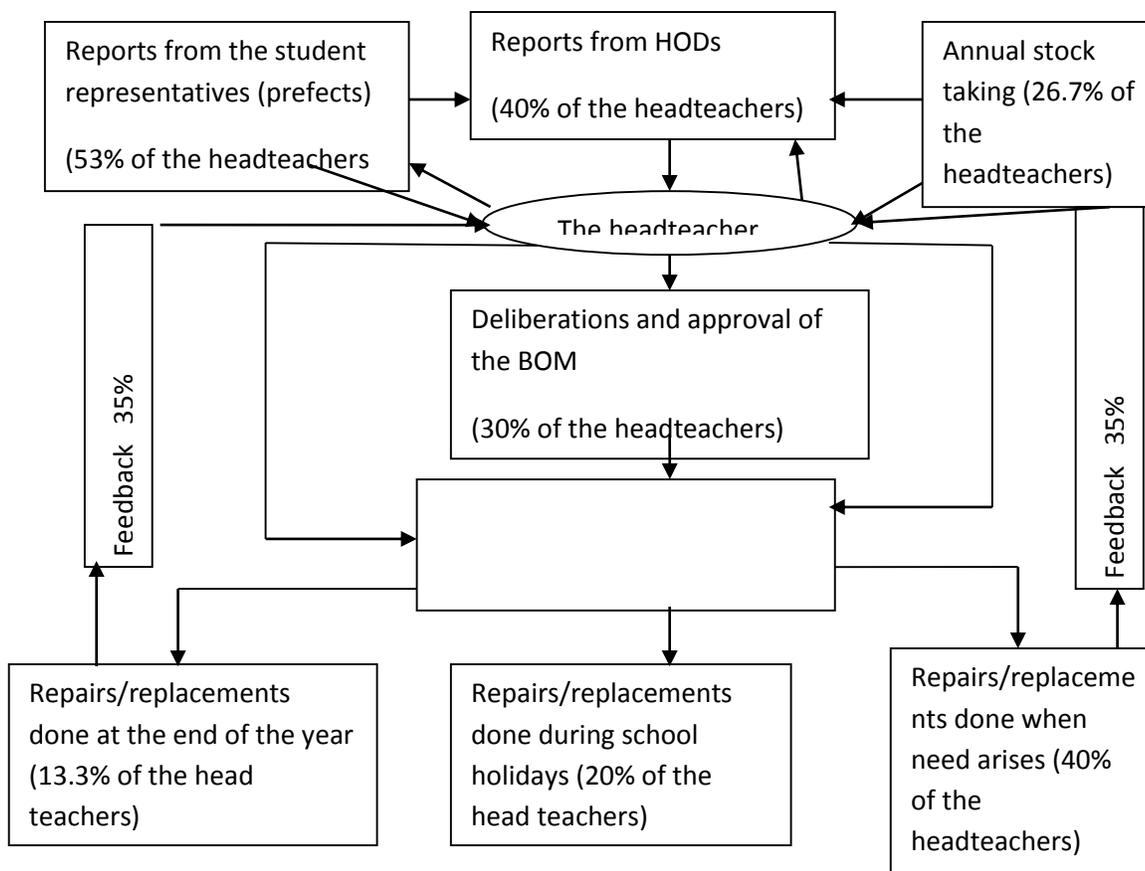


Figure 2: How maintenance programs are managed in schools

Data presented on figure 2 shows that head teachers receive reports from (53%) students, HODs (40%) and annual stock taking reports account for (26.7%). Upon

obtaining the information, the head teacher presents the maintenance needs to the BOM for deliberation and subsequent action or depending on the urgency of the need

(30%), the head teachers receive requisitions from the user departments (40%) and acts directly considering that head teachers manage the schools on behalf of BOM. Head teachers carried out repair/replacement at different times during the school calendar: at the end of the year (13.3%), during holidays (20%) and when needs arise (40%). The level of feedback was low given that maintenance requires finances which the study has found to be inadequate. Also required are the policy guideline that needs expertise in order to meet specifications especially for facilities so as to achieve good standards of repair that can create a conducive environment that would motivate students to achieve more in their academic work.

From the data it was found that head teachers have brought on board all the necessary stake holders in the management of physical facilities and were able to provide feedback a situation that should have impacted positively on the general state of school resources and reflected a conducive environment for enhanced performance in

National examinations. However, from the data only 30% of the schools involved their BoM and the level of communication in form of feedback was only 35% which was low to have an impact on the management process that would be expected to have an impact on schools' physical resources that would influence academic performance of students. This view is supported by Olutola (2000) who argues that effective communication and collective decision making was critical in the maintenance of resources in schools since they directly/indirectly relate to students' academic achievements.

Role of students in Maintaining Physical Resources and its influence on Academic performance

Students were asked to make suggestions on the role they should play in maintaining physical resources in order to improve their performance. The data obtained is summarized on Table 2

Table 2 Role of students in maintaining physical resources

Suggestions	F	%
Cleaning the facilities	85	28.6
Using the materials for correct purposes	79	26.6
Not damaging them	64	21.5
Reporting those who destroy	40	13.5
Ensuring proper storage after use	39	13.1
Handle property with care	28	9.4
Reporting on broken or spoilt materials	26	8.8
Obey school rules related to use of facilities	16	5.4

Data presented on Table 2 reveal that students can contribute towards better management of school resources by cleaning the facilities that they use (28.6%), use resources for the correct purposes (26.6%), avoid damaging them (21.5%) report those who destroy school resources (13.5%) and proper storage after use (13.1%). A few (9.4%) students were of the opinion that school resources should be handled with care, reporting to the school administration on broken or spoilt materials (8.8%) and the need to obey school rules related to the use of facilities. However the last two indicate a small percentage and yet reporting and obeying rules play a key role in the management of school resources .The small percentage may be attributed to underlying discipline problems among students or lack of skills among the head teachers in the planning, organizing, decision- making,

coordinating and controlling of students in maintaining school resources. Wango (2009) asserts that head teachers should be conversant with the management principles in order to integrate students in the use of school resources.

Ways to improve Maintenance of Physical Resources for enhanced Students' performance

The teachers were asked to identify ways to improve maintenance of school physical resources in order to achieve enhanced performance. The data obtained is summarized on table 3.

Ways to Improve Maintenance of Physical Resources for enhanced students' Performance

Table 3: Ways to Improve Maintenance of Physical Resource

Suggestion	f	%
Increase repair& maintenance vote	28	47.5
Structured maintenance programme	22	37.3
Sensitization of students	18	30.5
Proper accountability from those in charge	16	27.1
In servicing of teachers	13	22.0
Employing skilled technicians	11	18.6
Assigning duties to teachers	9	15.3
Nurture positive attitude among students	6	10.2

The data shows that (47.5%) teachers suggested that the repair and maintenance vote be increased. Other suggestions were: structured maintenance programme (37.3%) , need to sensitize students (30.5%), need for proper accountability from those in charge of the facilities (27.1%), in servicing of teachers (22%), employing skilled technicians for those facilities that required technical expertise to maintain (18.6%), assigning duties to teachers to take care of school facilities (15.3%), and nurturing responsible attitude among the students (10.2%).

The study found out that the way forward was to increase the repair and maintenance vote and have a structured maintenance programme. A structured maintenance programme is a cornerstone of academic performance. However with tight budgets, school Boards and head teachers often consider maintenance budget as soft money, an expense that can be reduced without affecting academic program needs. The study established that it was necessary for schools to have a structured maintenance programme to ensure that facilities are well repaired, renovated and improved. This was likely to provide quality facilities that would improve the teaching and learning environment. From the observation made in the sampled schools, the resources in most schools in the district could as well be regarded as obsolete in terms of quality, quantity and state of repair a scenario that may be negatively influencing performance in Kiminini Sub-County. These views are supported by Ejionueme (2007) who states that poor conditions of physical facilities in secondary schools would continue to adversely affect their performance.

5. Conclusion and Recommendations

5.1 Conclusion

For effective management of the scarce physical and material resources, the study concluded that participatory management through delegation was key to ensuring that school resources are well utilized. Schools have to bring on board teachers, students, and reliable support staff to oversee the use and maintenance of school resources. Schools should strive towards nurturing responsible students who will respect and safeguard school physical and material resources. The study concluded that the utilization of physical and material resources is based on supply-demand process that largely depends on availability, adequacy, student population and lack of maintenance culture which affects the interplay of these factors making schools to perform below expectation in KCSE examinations.

5.1 Recommendations

From the findings and conclusions of the study, the following recommendations were made: School administrators should prioritize acquisition of physical and material resources in a school and also adopt a maintenance culture that would help to address the issues of renovation, repair and modernization of the existing facilities.

At the school level, schools should be encouraged to adopt participatory management of school resources. This will help create ownership of the various policies put in place towards the management of school facilities.

Schools should also strive to nurture responsible students who respect school facilities as industries for future generations and school material resources as critical inputs in the industry.

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