

Secondary Schools' Strategies in Maintenance of Physical Facilities on Costs of Education in Western Region, Kenya

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Abstract

Physical facilities are vital in the learning process in educational institutions. Governments as well as other stake holders invest heavily in them. It is therefore necessary that there is proper maintenance of the same to reduce recurrent costs in education which remain a hindrance to learners' participation. This study therefore investigated secondary schools' strategies in maintenance of physical facilities on costs in education in Western Region, Kenya. Four objectives guided the study; to find out the extent to which secondary schools hire personnel, organize for capacity building of personnel, as well as how they supervise and monitor maintenance of physical facilities. The study was eclectic utilizing both quantitative and qualitative methodologies. The research design used was a descriptive survey which covered 92 secondary schools drawn from 8 selected sub counties of Western Region. Primary data was collected from a sample of 460 respondents, who included 92 head teachers, 92 deputy head teachers, 92 stores clerks, and 92 class prefects selected through purposive and simple random sampling methods. Data was collected through questionnaires, interviews, direct field observation and document analysis. The data was analyzed using descriptive statistics involving frequencies and percentages. The study found out that: secondary schools do not hire qualified personnel nor organize for capacity building of their personnel for maintenance of physical facilities through training workshops, seminars, and expert talks; those charged with the responsibility of supervising and monitoring the usage of the facilities do not adequately supervise maintenance of physical facilities' activities through such activities as planning, formulation of policies on maintenance, allocation of duties on maintenance, motivation of personnel, and provision of adequate materials for maintenance. They do not monitor maintenance of physical facilities through personal inspections, stock taking nor preparation of maintenance records. This shortfall resulted into schools incurring huge budgets in maintenance of school plant.

Introduction

Background to the study

A school plant is the totality that makes up a school system. It comprises the physical and material facilities in form of buildings, school site and the environment that embody it, Charis (2001). This will comprise structures like workshops, libraries, classrooms and even the education system itself for the benefit of the learners. Adeboyeje (2000) in his study in Nigeria asserted that school facilities are the physical and spatial enablers of teaching and learning which increase the production of results, and that school plants are material resources that facilitate effective teaching and learning. This description is in agreement with that used in the Teacher Education Materials Development Project (TEMDEP, 1993). In that project the term resources in educational management meant items that one finds in the school or environment which may be used to facilitate teaching and learning.

According to Bakhda (2004), other physical facilities may include permanent and movable items and equipments that facilitate learning such as machinery including motor vehicles and grinding machines, laboratory equipment, blackboards, teachers' tools as well as consumables like chemicals, soap, exercise books, papers and others. Asiabaka (2006) in the study found out that the physical facilities play a pivotal role in the actualization of the educational goals and objectives. They are used to satisfy the physical and emotional needs of the staff and students in the course of their stay and study in a school. Physical facilities therefore consist of all types of buildings and equipment for academic and non-academic activities like areas for sports and games, landscape, farms and gardens. The other physical facilities are the trees, roads and paths, furniture, toilet facilities, lighting, acoustics, storage facilities and parking lot, security, transportation, information communication technology (ICT) items, cleaning materials, food services, and special facilities for the physically challenged persons.

According to the International Facilities Management Association (2002) strategies on maintenance of physical facilities will entail the practice of co-ordination of the physical workplace with the people and the work of the organization. It will also involve the application of scientific methods in the planning, organizing, decision-making, co-ordination and controlling of the physical environment for learning for the actualization of the educational goals and objectives. The ultimate goal is to ensure proper construction, utilization and maintenance of facilities to ensure that educational goals are achieved. Usually physical needs of a school are met through provision of safe structure, adequate sanitary facilities, a balanced visual environment, and sufficient shelter space for the work of learners. Therefore schools have to be creative and innovative in coming

up with strategies in the management of school facilities. This involves among other things, collective decision making in relation to design and construction of new school plants including grounds, renovation and modernization of old plants, provision of equipment for academic and non-academic activities, maintenance of all facilities and review of management practices and processes. They should therefore have functional monitoring and evaluation systems in place for efficient utilization of the resources in the schools.

Studies have found out there is the importance of maintenance of facilities in schools just like it is in other organizations. Kopp (2005), in her study on facilities in Maryland state found that by maintaining building systems, the cost of future repairs and major renovations are significantly reduced, and that regular maintenance ensures that buildings remain operational even under adverse weather conditions. She further observed that well maintained school facilities protect the health and safety of occupants. A study by Igwe (2001), found that when schools put in place proper strategies to supervise and to help personnel become more effective in planning their work in terms of utilizing maximally materials and facilities for achievement of educational objectives the life span of the facilities will be elongated. The findings suggest that proper maintenance of the physical facilities will drastically reduce losses and misuse of funds.

Statement of the Problem

School plan is the major consumer of the much financial resources raised in schools. For example an average three streamed fully enrolled county school with a population of 480 students and basing on the Kenya government's policy on fees charges of Kshs. 53554, an annual operational budget of Kshs. 25,728,000 will be realised. On the other hand an average two streamed day secondary school with a population of 320 and basing on the governments recommended fees charges of kshs. 9374 per student, the annual budget is approximately 3,000.000 will be realised. Much of these monies are used to maintain and improve the school plant. Only a quarter is used on personal emoluments. This calls for proper strategies in planning and monitoring and evaluation of the maintenance of the physical facilities by the schools for proper utilization and minimization of financial losses.

Purpose of the study

The purpose of this study was to investigate the strategies secondary schools employ in the maintenance of physical facilities on recurrent costs in secondary schools in western region, Kenya.

Objectives of the study

The study was guided by the following objectives;

- i- To establish the secondary schools' strategies in recruitment of personnel for maintenance of physical facilities on recurrent costs of education in Western region Kenya
- ii- To examine the secondary schools' strategies on facilitation of the capacity building of school personnel in maintenance of physical facilities on recurrent costs in education
- iii- To determine secondary schools' strategies in the supervision of personnel in maintenance of physical facilities on recurrent costs in education
- iv- To establish the secondary schools' strategies in monitoring and evaluation of maintenance of physical facilities on recurrent costs in education

Research questions

- i. What strategies have secondary schools put in place to recruit qualified personnel for maintenance of physical facilities to affect recurrent costs in education in Western Region Kenya?
- ii. How have secondary schools strategized to facilitate the capacity building of their school personnel in maintenance of physical facilities to affect recurrent costs in education?
- iii. What strategies have secondary schools put in place to supervise personnel in maintenance of physical facilities to affect recurrent costs in education?
- iv. What are the secondary schools' strategies in monitoring and evaluation of maintenance of physical facilities to affect recurrent costs in education?

Significance of the study

The study findings may be significant to the secondary school management team themselves who may use them to improve on the planning of strategies in the utilization of the school financial resources to minimize misuse of funds for the benefit of the learners and other financiers of school programs. The findings may also be used by the policy makers in the ministry of education to come up with policies that govern maintenance of physical facilities to reduce costs in education to increase participation rates. The workers charged with responsibilities of maintaining school plant may use the findings to identify their training needs for capacity building to help them improve in their skills and knowledge of maintenance of physical facilities. This may help the schools reduce

recurrent budgets on maintenance and operational costs to free money for other activities that may make school plant to always remain attractive to those who come and use it.

Limitations of the study

In the course of the study it was difficult to gain confidence of the respondents especially the head teachers who viewed the study as a witch handing exercise to eaves droop in their affairs. However with proper explanations to them they cooperated and gave vital information on the subject area of the study. It was also difficult to identify right people to give information especially those expected to be the maintenance officers a position not familiar in secondary school set up. The school clerks and foremen who seem to be occupying the position were handy and gave the much needed data for the study.

Delimitation of the study

The study was delimited to secondary schools in western region of Kenya comprising of four counties; Bungoma county, Kakamega county, Vihiga county and Busia county. Data was specifically collected on all the physical facilities found in the schools in the counties mentioned.

Assumptions of the study

- a. All secondary schools have put in place strategies in the maintenance of the physical facilities to reduce recurrent budgets in their respective schools.

Research methodology

This study was eclectic and utilized both quantitative and qualitative research paradigms through a descriptive survey research design. Bryman (2004) argued for a more a mixed approach that recognizes ties or themes that connect quantitative and qualitative research. In this study the quantitative methodology was used to gather data through questionnaires that answered questions on the strategies that existed on the ground with regard to maintenance of physical facilities while qualitative methodology was used to gather data by interviews and direct observation to collaborate information from the questionnaires on how the strategies have been implemented to affect the state of physical facilities in schools under study. This provided rich information for the study.

The study targeted all the 870 public secondary schools in Western Region as per the records at the ministry of education at the time of the study. In the study sampling was done in three phases. The first phase involved drawing a sample of sub-counties to take part in the study. The sub-counties were first stratified into four categories based on the administrative boundaries of the counties of Western Region, that is, Bungoma, which had 7 sub-counties, Kakamega which had 8 sub-counties, Vihiga which had 4 sub-counties and Busia with 7 sub-counties. Out of these four strata, thirty percent of the sub-counties were proportionately selected giving a total of 8 sub-counties two from each county to participate in the study. This was informed from the arguments of Borg and Gall (1989) that a sample of thirty percent is representative of the population when target population is homogeneous.

The second phase involved sampling of the schools within the sub-counties selected for the study. A sample of 92 secondary schools was proportionately drawn from the 305 schools in the 8 selected sub-counties using stratified and simple random sampling techniques. The schools were first stratified into: girls' only, boys' only and mixed schools. Thirty percent of the schools were again proportionately selected from the three strata using simple random sampling. This gave 8 boys' schools, 17 girls' schools and, 67 mixed schools giving a total of 92 schools.

The third phase of sampling involved selecting respondents in the selected schools. According to Kalton and Moser (1985) purposive sampling can be used to select participants based on specific characteristics, experience, behavior, or those that represent one or more perspectives deemed relevant to the study. Purposive sampling was therefore used to select 92 head teachers, 92 deputy head teachers and 92 store clerks/foremen. These group of respondents were assumed to possess pertinent information regarding strategies in maintenance of physical facilities in their respective schools. Simple random sampling was used to select 92 class teachers and 92 form three and four class prefects in the sampled schools.

The study used four instruments for data collection; Questionnaires, Interview Schedules, Document analysis and Direct Observation. This was done so as to allow triangulation of the data captured by each instrument exhaustively. Triangulation has advantages since through it comprehensive information of the study topic can be adduced by eliminating over-reliance on one single source of data Mwanje (2001). This was also important as a strategy where several methods can be put into play to gather information and allow for the cross-checking of facts among themselves.

In this study five sets of questionnaires were developed by the researchers for the following categories of respondents; head teachers, deputy head teachers, store clerks, class teachers and form three and four class prefects. The head teachers', deputy head teachers', class teachers' and stores clerks' questionnaires consisted of

section A and B. The items in section A sought general demographic information such as gender, age, academic and professional qualification as well as working experience of the respondents, while section B contained statements seeking specific information on the strategies in maintenance of physical facilities in the schools by the various groups of respondents. Students' questionnaires also had two sections. The items in section A. sought information on gender, class and type of school for respondents, while the second section sought answers on their role in maintenance of physical facilities. The questionnaire items were both closed-ended and open-ended. This gave them an opportunity to express their opinions on issues such as the state of physical facilities as well as the challenges they faced in maintenance.

A structured interview method where there were sets of pre-determined questions to which respondents were expected to respond was used. The interviews were conducted to the head teachers, deputy head teachers and store clerks/foremen. This method helped the researchers to gather in-depth information on the maintenance practices in the schools.

A list of what was to be observed was prepared in advance. This included items such as; school buildings, furniture, playgrounds, litter levels and means of litter disposal, as well as the general school cleanliness, flower beds, pavements, and adequacy and state of sanitation facilities such as latrines and toilets. The observation checklist was arranged in such a way as to allow for a variety of scoring procedure to be done. The notes on the observed information for each item were recorded systematically in a field notebook.

Relevant documents were examined in a desk top study. A desk top analysis of the existing policy documents and government publications including; education commission reports, development plans, Ministry of Public Health and sanitation requirements, Ministry of Public works requirements was done. Other documents analysed included: circulars from the Ministry of Education on free day secondary education that shows the allocation of funds into different vote heads, school infrastructure improvement funds, text book receipt issue registers, stock taking records, stores ledgers that indicate receipts and issues of cleaning materials, school procurement records, school strategic plans, school site plans, punishment books that indicate the type of punishments meted on those who damaged school facilities, and Ministry of Education return forms (yellow forms) that indicate availability of different facilities in schools.

DATA ANALYSIS, PRESENTATION, INTERPRETATION AND DISCUSSION

This section presents the report of the data gathered from the field as well as an analysis of the same.

The Instruments Return Rate

The target population of the study consisted of all the 305 public secondary schools in the sampled sub-counties of western Region out of which 92 were sampled. All the 92 sampled schools were visited during the study and questionnaires administered to head teachers, deputy head teachers, class teachers, stores clerks and students. An average of 98 percent respond rate was realised. This return rate was considered very high and good enough for analysis. This was based on Kerlinger (2006), who recommended a return rate of more than 60 % as high enough in a survey study.

The first objective of the study was to establish the strategies schools have used to ensure that they hired relevant and qualified personnel in the maintenance of physical facilities

As background information, all the head teachers in the sampled schools were found to have had adequate experience and exposure to various administrative challenges that enabled them gain appropriate experience to guide their boards of management to come up with relevant strategies in maintenance of physical facilities in their schools especially on hiring of various personnel in their schools.

The strategies examined under recruitment of competent and qualified personnel included hiring of workers who possess the right skills to enable the organization realize its goals. The personnel examined included school artisans, stores clerks, and librarians. Findings on whether schools employ different types of employees for different assignments in the maintenance exercise are presented in tables 4.1.

Table 4.1 Schools' employment of personnel for maintenance

Response	Type of employee			Percentage
	Artisans	Store clerks	Librarians	
No response	81	58	72	78.1
Yes	9	32	18	21.9
Total	90	90	90	100

Responses from table 4.1 revealed that on average only 21.9 percent of the head teachers employed specific employees in charge of maintenance of physical facilities in schools.

It was important to establish the professional qualifications of the few workers performing duties in the three categories. Table 4.2 presents findings on professional qualifications of these three categories of employees.

Table 4:2 Professional qualification of personnel in charge of maintenance

Responses	Type of employee			Percentage
	Artisans	Store clerks	Librarians	
Certificate	4	8	6	30.1
Diploma	2	2	0	06.8
No training	3	22	12	62.7
Total	9	32	18	100

Results on this item in table 4.2 revealed that the majority of those hired 62.7 percent did not have formal training in their specific fields of operation. It was only artisans who had the highest percentage of employees hired by the schools that possessed professional training, for out of the 9 employed, 6 had training at certificate and diploma level giving a 67 percent.

Schools would save much of their funds by employing artisans who possess skills in different areas such as masonry, carpentry and electrical works. Such qualified personnel would help identify facilities for repairs or replacement through early detection of faults and subsequent repairs. The researchers therefore endeavoured to find out the fields of training for the artisans. The fields of interest and relevant to maintenance of school plant were masonry, plumbing, carpentry and electricians among others. The data on this is presented in figure 1.

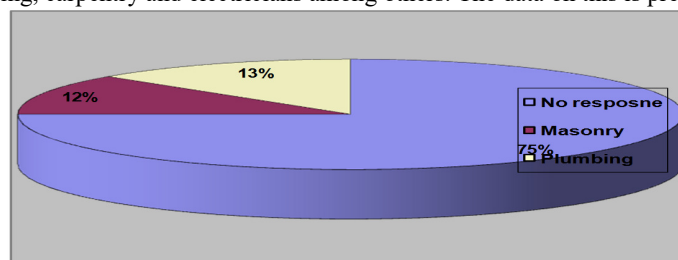


Figure 4.1 Basic training skills of the school artisans employed to be in charge of maintenance

From the data in Fig.4.1, of the artisans employed by schools, only 12 percent had training in masonry and 13 percent in plumbing. There was no artisan with training in carpentry and electrical works. The head teachers were asked during the interview how they handled repairs that needed the expertise of a carpenter or electrician they all said that they hire whenever need arises. Others said they have hired those with some knowledge but not necessarily with any training. This made maintenance exercise very expensive as expressed by one head teacher during the interview. If schools were to employ qualified personnel as artisans in carpentry and electrician the areas that register most breakages and faults respectively almost on daily basis, schools could save a lot of money incurred on costs due to deferred maintenance or hired labour. This may explain the presence of many broken wooden and electrical facilities observed during visits to schools in the study. Thus through proper maintenance schools can be able to save much of their funds by having facilities which are in optimum state and which last longer due to better maintenance.

Maintenance also requires keeping of records and preparation of maintenance schedules. This requires employment of qualified store clerks/foremen with skills in management of records. However a majority of the schools employed personnel in those positions with no formal professional training as shown in table 4.2. In the absence of proper record keeping on requirement for maintenance, schools are incurring losses in terms of heavy repairs on items that could be disposed off or through repairable items in stores and buying others as expressed by the head teachers during the interview.

The second objective of the study was to examine the secondary schools' strategies on facilitation of the capacity building of school personnel in maintenance of physical facilities on recurrent costs in education

The second objective of the study was to examine the strategies to facilitate or organize for capacity building of those engaged in the positions of maintaining the schools plants. Such capacity building strategies would include allowing personnel to attend workshops or short courses privately or sponsored by the schools. This initiative enhances productivity of the office holders.

In this study there was an attempt to examine the extent to which head teachers as chief executives of the schools facilitated training of personnel on maintenance of physical facilities through seminars and workshops or inviting experts to sensitize school personnel on best maintenance practices. The other concern was on whether head teachers involved various personnel in planning for facility maintenance as a form of motivation so as to enhance full participation and ownership of their areas of operation. This was done by first looking at whether head teachers themselves attended courses on school management. The data is in table 4.3.

Table 4.3 Head teachers' attendance of training on school management

	Frequency	Percentage
No response	28	31.1
KEMI	55	61.1
KEMI and others	7	7.8
Total	90	100

Findings in table 4.3 revealed that the majority of head teachers 61.1 percent had attended KEMI courses on management. Document analysis of the KEMI course materials and content in the training manuals revealed that there are various topics on management such as, financial, human and physical resources, which are vital for the task of head teachers. This means that, the majority of the head teachers were aware of the importance of hiring the right personnel for the jobs but have not strategized this in their hiring practices.

It was prudent to establish the sponsorship of the head teachers to the training. It was established that all the head teachers were sponsored by their respective boards of management. Hence schools had put in place strategies to capacity build the head teachers to manage and maintain the school plant.

Apart from training courses, head teachers were asked to indicate the number of workshops on management they had attended in the previous two years. The findings revealed that 19.4 percent had not attended any, 67.7 percent of the head teachers had attended only one and only 13 percent had attended two or more workshops. It is important that head teachers should be given more training opportunities so as to improve their hiring strategies of personnel in the schools.

Head teachers work in collaboration with other school personnel to implement set plans and strategies. They therefore need to facilitate other personnel in the school to undergo training to get equipped with relevant skills and knowledge to perform their duties. The researchers tried to find out if head teachers sponsored school personnel charged with the responsibility of maintenance. Results are as captured in table 4.4

Table 4.4 Sponsoring school personnel for training on maintenance of facilities

	Frequency	Percentage
Deputy head teachers	60	66.7
Teachers	17	18.9
Subordinate staff	9	10.0
Prefects	4	4.4
Total	90	100.0

Data in table 4.4 reveal that it is the deputy head teachers who are in most cases given opportunities to train at 66.7 percent. The findings contradict those by Fellgy (1999) in a survey carried out in Canada which showed that all the personnel are facilitated at the same level. However this is a requirement in Canada as the study further revealed unlike in Kenya where career development and planning and support for training is not ingrained into organizational plans and activities at all levels in the schools. Given that teachers and prefects oversee the use of facilities on daily basis, for the schools to benefit and make a saving, it is important that they get exposed to training to acquire the relevant skills on maintenance of physical facilities.

The other school personnel: stores clerks, artisans and librarians who are in charge of various facilities in schools also require adequate training. The responses from the store clerks on attendance of training courses on maintenance of physical facilities in the previous five years as at the time of the study by school personnel yielded results in table 4.5.

Table 4.5 Sponsorship of personnel for training on maintenance

Responses	Type of personnel							
	Store clerk		Librarian		Grounds men		Total	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Yes	3	3.3	2	2.2	2	2.2	7	2.6
No	87	96.7	88	97.8	88	97.8	263	97.4
Total	90	100	90	100	90	100	270	100

Results in table 4.5 revealed that on average only 7 or 2.6 percent of head teachers sponsored their various maintenance personnel for training on maintenance. Given that the majority of personnel did not have any professional training as shown in table 4.2, it implies that support staff in the majority of schools lack the relevant knowledge and skills in maintenance of school facilities.

The third objective of the study was to determine secondary schools' strategies in the supervision of personnel in maintenance of physical facilities on recurrent costs in education

This was done by finding out whether schools: planned and involved all school personnel in planning for facility maintenance, assigned maintenance duties to school personnel, provided maintenance materials, set school policies on maintenance, and whether they motivated school personnel on maintenance.

The first concern was on establishment of School Infrastructure Committees (SICs) as per the ministry of education policy on infrastructure by all public schools (ROK, 2007). Responses on whether schools had school infrastructure committees are captured in table 4.6.

Table 4.6 Availability of school infrastructure development committees in schools

	Frequency	Percentage
Yes	28	31.1
No	62	68.9
Total	90	100.0

Table 4.6 reveals that only 28 or 31.1 percent of the schools complied with the policy and had infrastructure development committees in place. This is contrary to the ministry of education's policy requiring that all schools form infrastructure committees to oversee all school development projects. It was established during the interview that the schools that had set up infrastructure committees were those that were funded under the economic stimulus programme or those that received special government grants or donor funding whose formation of the committees was a pre-requisite condition for getting the funding. Observation during the study showed that schools that had school infrastructure committees in place possessed facilities that were rated as good compared to those in the schools that did not.

Apart from forming the SICs in the schools, schools also need to supervise programmes in schools to ensure their success. In table 4:26, class teachers were asked to show whether head teachers as chief executives of the schools assigned supervisory roles to teachers to supervise the maintenance of facilities such as administration blocks, classrooms, laboratories, flower beds, pavements, and playgrounds. Data on this item is recorded in table 4.7.

Table 4.7 Assignment of maintenance duties to teachers

	Agree		Disagree		Total	
	Freq.	%	Freq.	%	Freq.	%
Administration Block	8	8.9	82	91.1	90	100
Classrooms	81	90.0	9	10.0	90	100
Laboratories	68	75.6	22	24.4	90	100
Dormitories	25	27.8	65	72.2	90	100
Furniture	12	13.3	78	86.7	90	100
Sanitation facilities	3	3.3	87	96.7	90	100
Playfields	23	25.6	67	74.4	90	100
Water facilities	2	2.2	88	97.8	90	100
Total	232	32.2	488	67.8	720	100

Findings in table 4.7 revealed that on average only 32.2 percent of the class teachers agreed that their head teachers assigned the cited facilities to them to supervise in maintenance. This is therefore a good move by the schools to use teachers to supervise maintenance works.

Motivation of students and all other school personnel is necessary to foster a positive culture on maintenance. Responses on motivation of school personnel by the schools for best maintenance practices are presented in tables table 4.8.

Table 4.8 Motivation of students for maintenance

	Frequency	Percentage
No response	60	66.7
Awarding marks for best maintenance	12	13.3
Giving trophies for best maintenance	6	6.7
Giving certificates on prize giving days	9	10.0
Verbal praises during assemblies	3	3.3
Total	30	100

Data in table 4.8 shows that only 30 or 33.3 percent of the prefects indicated that their head teachers motivated them in one way or another. The same response was gotten from the other personnel in the schools. Eighty seven point eight percent of the support staff and teachers said that they were never motivated, 2.2 percent said they were motivated by being given trophies, and 10 percent mentioned being given certificates during prize giving days. This was confirmed by the deputy head teachers in the interviews.

The strategy on supervision of maintenance will include preparation of relevant work schedules and protocols. Maintenance schedules are vital because they indicate information such as maintenance requirements and procedures, especially for machines and accessories like computers, lighting, and plumbing and sanitation facilities. The researchers attempted to find out whether head teachers kept maintenance programmes for different facilities in their schools. Responses are as shown in table 4.9.

Table 4.9 Document analysis on preparation of facility maintenance schedules

	Frequency	Percentage
Non existent	72	80.0
School buildings	2	2.2
Utility facilities	2	2.2
School machines	2	2.2
School bus	12	13.3
Total	90	100.0

Table 4.9 reveals that the majority of the schools 80.0 percent did not have maintenance work schedules. This was also confirmed from the interviews with head teachers. The only maintenance record kept in schools was that of the school vehicles especially the work tickets for the buses. The other facilities did not have clear maintenance schedules as it was difficult to establish when the equipment and machines were last serviced when they be serviced next.

In the absence of schedules the researchers wanted to establish if head teachers budgeted for maintenance of damaged facilities. Results are captured in table 4.10

Table 4.10 Budgeting for maintenance Head teachers

	Frequency	Percentage
No response	78	86.7
Agree	8	8.9
Disagree	4	4.4
Total	90	100.0

The results on this item indicated in table 4.10 shows that only 8.9 percent of the head teachers budgeted for potential breakages or damage to facilities. This attests to the low emphasis that schools lay on the area of maintenance, in spite of the vital role that facilities play in the teaching and learning process as revealed during the interviews with the head teachers. The interviews with head teachers and their deputies revealed that maintenance items for cleaning; soap, brooms, and disinfectants, and others such as hoes, slashes and jembes for weeding flower beds were the only ones usually factored into the budgets. The students however lamented that their head teachers did not provide them with adequate equipment and materials for cleaning and weeding of the flowerbeds as in table 4.11.

Table 4.11 Adequacy of provision of equipment and materials for maintenance

Responses	No response		Adequate		Not adequate		Total	
	Freq	%	Freq	%	Freq	%	Freq	%
Soap	3	3.3	24	26.7	63	70.0	90	100
Mopes	5	5.6	19	21.1	66	73.3	90	100
Buckets	4	4.4	9	10.0	77	85.6	90	100
Brooms	12	13.3	13	14.4	65	72.2	90	100
Water	29	32.2	12	13.3	49	54.4	90	100
Jembes	25	27.7	18	20.0	47	52.2	90	100
Slashes	11	12.2	15	16.7	64	71.1	90	100
Disinfectants	16	17.8	10	11.1	64	71.1	90	100
Total	105	14.6	120	16.7	495	68.8	720	100

On average the majority of head teachers 68.8 percent did not provide their students with adequate materials for cleaning as shown in table 4.11. The other very crucial but most neglected is the provision of dustbins. From the study only 4.4 percent of the head teachers provided dust bins at the class level the rest 95.6 percent did not. This agrees with a study by Snell (2003) who found that provision of enabling factors and materials enhances maintenance of facilities in schools. These findings are confirming those in table 4.10 which revealed lack of budgeting for maintenance materials and equipment by the schools.

The fourth objective of the study was to establish the secondary schools' strategies in monitoring and evaluation of maintenance of physical facilities on recurrent costs in education

Monitoring and evaluation entails checking facilities so as to identify faults in time and address them accordingly. Such checks involve frequent inspection, regular preparation of reports about the state of facilities and suggestions about mitigation factors.

Monitoring and evaluation of school programmes begins with possession of relevant data on the activity that is being monitored. For proper maintenance, schools need to have facts about the state of facilities, when they were constructed or bought, when they were last serviced, information on maintenance requirements, as well as identified defects and their intensity, so as to enable them plan for their maintenance or disposal. The reports will also encourage accountability on the part of users, support future planning and facilitate accurate

costing of future maintenance activities. This will in turn help schools save funds which they would otherwise lose due to deferred maintenance. Information on whether head teachers put such strategies is captured in table 4.12.

Table 4.12 Availability of maintenance reports of the facilities

	Frequency	Percentage
No response	3	3.3
Prepared	8	8.9
Did not prepare	74	82.2
Total	90	100.0

The findings in table 4.12 revealed that only 8 or 8.9 percent of the schools prepared maintenance reports. These findings contradict requirements from the ministry of education requiring schools to maintain evaluation reports on performance and quality of physical facilities in their schools (RoK, 2011).

Monitoring will also involve direct moving around by the head teachers to see for themselves the state of physical facilities in the schools. Consequently, an inquiry was done to establish whether head teachers carried out regular checks on the state of facilities in schools. The findings are in table 4.51.

Table 4.13 Frequency of inspection of facilities by head teachers

	Frequency	%
Once a term	6	6.7
Once a month	8	8.9
Once a year	12	13.3
Can't remember	64	71.1
Total	90	100.0

The findings in Table 4.13 revealed that only 26 or 28.9% of the head teachers personally checked school facilities at varied frequencies and periods however there was no record on this. The head teachers never signed anywhere that they had inspected or visited a particular site to check on the status of the facilities. The interviews by the head teachers indicated that a majority of them relied on verbal reports given by other school personnel. It was established that such reports lacked commitment, accountability and accuracy of the information on the state of the facilities. The head teachers confirmed through the interviews that various officers gave different reports of the same thing whenever asked. Other head teachers complained that at times written reports did not reach them on time, leading to delays in taking corrective measures. These findings contradict findings from a study by Grauwe (2007) who recommended that head teachers should make periodic checks on facilities to ensure that they are continuously operating within certain pre-established tolerance so as to prevent defects by making timely adjustments.

Conclusions

In conclusion it is found from the study that though there are very good strategies in schools on maintenance of physical facilities, implementation is wanting. Schools incur huge losses in the repairs of their plants arising from incompetent personnel hired to maintain the school plant. Huge budgetary savings are likely to accrue and reduce recurrent costs of education in schools if schools implemented their strategies on maintenance of their plants.

REFERENCES

- Adeboyeje, R. A. (2000). *"A Practical Approach to Effective Utilization and Maintenance of Physical Facilities in Secondary schools in J. O Fadipe and E. E. Oluolukwe (Eds.)"*. Educational Planning and Administration in Nigeria in the 21st Century Undo Nepa.
- Ajayi, A. E. (2001). *"Human Resources Management in the Civil Service"*. Paper presented at the senior staff seminar, Ministry of Education, Ado-Ekiti, Thursday, 1st March.
- Akinsolu, A.D (2004). *"Provision and Management of Facilities in Nigerian Primary Schools"* in E.O.
- Asiabaka, I. P. (2008). *"The need for Effective Facility Management in Schools in Nigeria"*, New York Journal Science Journal 2008: 1(2): 10-12 (ISSN: 1554-0200
- Bakhda, S. (2004). *"Management and Evaluation of Schools"*, Nairobi: Oxford University Press.
- Borg, W.R. and Gall, M.D. (1989). *"Educational Research": An Introduction*, 3rd (ed.) New York: Longman
- Bowers, J. H. & Burkhet, C. W. (1988). *"Physical Environment Influences Related to Student Achievement, Health Attendance and Behaviour"*. Council of Educational Facility Planners Journal 26, pp 33-34
- Charis, M. P. (2001). *"Teachers' Sense of Efficacy and the Organizational Health of Schools": Journal of Research and Development in Education*, 31 (6), 18-29.
- Grauwe, H. (2007). *"Transforming School Supervision into a Tool for Quality Improvement"*. International Review of Education 53: 709-714.
- Igwe, S.O. (2001). *"Supervision, Evaluation and Quality Control in Education: in Nwagwu,"* N.A. Current

- Issues in Educational Management in Nigeria, AmbikPress LTD. Benin City.
- Kopp, N. (2005). *Maintenance of Public School Facilities in Maryland*. Initiatives to ensure that Maryland's Public school are Adequately Maintained. Baltimore County Public Schools Department of Physical Facilities Presentation to the Board of Education.
- Ministry of Education (2004). "*Primary Schools Instructional Materials Management Handbook*": Nairobi: Government Printer.
- Ministry of Education Science and Technology (2004). "*Primary School Instructional Materials Management Handbook*": Nairobi: Government Printer.
- Ministry of Education (2011). "*Economic Stimulus Initiatives in Managing and supervising an Educational Infrastructure*". Infrastructure Project Hand Book. Nairobi: Government Printer.
- Moser, CA and Kalton, G (1985). "*Survey Methods in Social Investigation*". Gower Publishing Company, Aldershot, England.
- Mwanje, J.A, and Gotu, B. (2001). "*Issues in Social Sciences*" (Module 1), Addis Ababa: OSSREA.
- Mwanje, J.A, and Gotu, B. (2001). *Issues in Social Sciences*, (Module 3), Addis Ababa: OSSREA.
- Nwagwu, N. A. (1978). "*Primary School Administration*". Lagos: Macmillan Nigerian Publishers.
- Ogunsaju, S. (1980). "*Some Aspects of School Management*". Ibadan: *Technology and Change*. San Francisco: Boyd & Fraser Publishing Co.
- Olagboye, A. A. (2008). "*Promoting School Plant Maintenance Culture in the Nigerian School System in Olagboye, A. A. and Fadipe, J. O. (Eds.), Management of Nigeria education: Project monitoring and school plant maintenance Ondo*": NIEPA.
- Price Copper Waters (2001). *Teacher Workload Study, A Report of a Review commissioned by the DfES*, London: Price Waterhouse Cooper.
- Republic of Kenya. (2008). "*Safety Standards Manual for Schools in Kenya*". Schools as Safety Zones. Nairobi: Church World services
- Republic of Kenya. (2011). "*Economic Stimulus Initiatives in Managing and Supervising and Educational Infrastructure*", Project Handbook. Government Printers Nairobi.