

# Investigation on Contributions of Principals on School Machinery and Equipment Management in Secondary Schools in Kenya

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**Abstract:** Provision, adequacy, utilization and management of educational facilities largely determine the quality and standards of education offered in a school yet there has been tremendous growth in students' population without corresponding growth in number of facilities as a result of economic depression and corresponding rise in education cost. This has put much pressure on the existing facilities, thus it appears school facilities have been forced to depreciate faster than their normal rate of depreciation. The purpose of this study was to examine the contributions of principals on school building management. Specific objective of the study was to determine the contributions of principals on school machinery and equipment management. This study was anchored on Total Quality Management Theory. A review of literature on the contributions of the Principal on school plant management was done in line with the study objectives. The study adopted concurrent triangulation within a mixed method approach. The target population was 176 respondents; 35 principals, 35 deputy principals, 35 boarding/senior masters, 35 Parents Association Chairpersons, 35 Board of Management Chairpersons and 1 Sub-County Quality Assurance and Standards Officer totaling to 176 respondents. Saturated sampling technique was used to sample 31 principals, 31 deputy principals, 31 Boarding/Senior Masters, 31 Parents Association Chairpersons, 31 Board of Management Chairpersons, and 1 Quality Assurance and Standards Officer totaling to 156. Data collection instruments were questionnaires and interview schedule. Face validity of the instruments was determined and ascertained by experts in the faculty of education, department of curriculum and education management while 4 schools from the sub-county were used for pilot study to determine reliability of the data collection instruments. Quantitative data were analyzed using descriptive statistics such as frequency counts, percentages and means. Qualitative data was transcribed, put into various categories and reported in an on-going process as themes and sub-themes emerged. The study found out that Principals contribute to school building management by ensuring proper supervision of the buildings and ensuring appropriate repairs are done; by ensuring approved physical plans are available in the schools where they work and by organizing budget which includes school maintenance. The study reported challenges in school plant management such as Poor Planning by some Principals, Principals' Lack of technical skills in the school plant management, inadequate time for supervision by school principals, poorly trained personnel to manage school plant, Poor maintenance of school facilities by school principals, High cost of maintenance of the school plant, Careless and Destructive Students in schools and Insufficient Funds in schools. It was recommended that the Ministry of Education in Kenya should enact regular in-service courses for School Board of Management Chairpersons on the management of school plant. This would make school Board of Management to be updated on best ways of management of school plant and utilization of machinery.

**Keywords:** Investigation, Contributions Plant Management.

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## 1. INTRODUCTION

### Background of the Study

Schools are established for the purpose of teaching and learning. It is also more important that the teachers and the learners are properly accommodated to facilitate the teaching and learning process. The curriculum cannot be implemented if the physical facilities required for teaching and learning are not available (Cynthia and Megan 2008). The term school plant includes the site, the building and the equipment. It includes permanent and semi-permanent structure as well as items such as machines, laboratory equipment the blackboard/chalkboard the learner and teacher tools. Enaohwo and Eferakeya (1989) defined school plants as the entire physical infrastructural facilities provided in the school for the purpose of educating the child. Ojedele (1998) has a broader view of school plant as including the school site and all the structures that have been put in place to aid effective teaching and learning in the school system. In his own view Yusuf (2008) defined school plant as the space interpretation of the school curriculum. The curriculum cannot be implemented if the physical facilities required for teaching and learning are not available. Without school plant, the school cannot exist to this end, it becomes necessary to ensure that school plant is properly planned and maintained to facilitate the effectiveness of the school system.

Yusuf (2008) observed that it will be impossible for the curriculum to be implemented if the physical facilities required for teaching and learning are not available. Absence of school plant makes teaching ineffective and desired learning will not take place. It becomes necessary to ensure that such plant is properly planned and maintained to facilitate the effectiveness of school system. The writer expresses that in some state secondary schools the classrooms are jam packed with children and, of course, poor teaching and learning manifests itself. Teachers could not move around to give the learners individual help where needed because there is no space in between the benches in the classrooms (Teaching Practice supervision experience). In collaboration, Ajayi (2007) and Yusuf (2008) maintained that school plants comprise the machinery which in turn includes machines and tools used in the workshop, in addition to duplicating machines. They also pointed out that school site, which is the landscape on which the school's permanent and non-permanent structures are built, are part of school plant. They also included buildings, equipment, furniture, vehicles of various types, electrical fittings, books, water supply infrastructure, and accessories like playgrounds, lawns, parks and farm, as part of school plant. The writer is lending her opinion by saying that school plant is all embracing in the fact that it comprises every single item starting from the gate of the school to the walls covering the school compound. This should be drawn into the ears of the school children who did not know that the school ground and everything in it belong to them and they should take good care of them.

In New York City, the principals do not contribute towards school plant management since school plant is managed by nonprofit foundations like Bill and Melinda Gate foundation, which has been working with the Department of Education. While fiscally dependent Districts in major cities like Cleveland rely on the often stressed budgets from their municipalities for their own school budgets, independent school districts traditionally finance public school construction, renovation, and maintenance through the sale of general obligation Bonds. (National Education Association, 2000). In Japan as far as educational fields are concerned, the national government makes plans and projects with the help of Board of Governors on school education systems and principals are expected to make major contributions towards the provision of various kinds of financial assistance including developing school buildings and other educational facilities. Komatsu (2000).

In Pakistan principals identify their school improvement plans including furniture, construction of school buildings, supply of drinking water, play grounds, and the construction of boundary walls and temporary shelters. Parents on the other hand raise funds and often contribute their own labor in the construction of temporary shelters and toilet facilities, (World Bank, 2003).

In Africa school plant management is being carried out by board of governors or school governing bodies with technical advice from the school principals. For example in Botswana, the ministry of Education of the republic of Botswana and the British Overseas Development Agency (ODA) launched an ambitious joint venture, the secondary school management development project, whose main objective was to raise management standards in secondary schools through the democratization of the structures which had hitherto been authoritarian, Monyatsi (2005).

Amanchukwu, and Ololube, (2015) in their study defined public secondary schools as schools which are catered for by the Rivers State government, by providing all the necessary infrastructures for effective teaching and learning. Service delivery is the ability of making use of available educational services to achieve educational goals and set objectives. School plant refers to everything within the school premises which includes the site, buildings, equipment and all essential structures, permanent and non-permanent as well as machines and laboratory equipment and others. Management of school plant requires good leadership, effective monitoring, maintenance culture; corrective, preventive and predictive maintenance etc. Issues of maintenance of school plant was raised: overcrowding; non-delegation of tasks by the principals of schools; vandalization of school property etc. Ways of maintaining school plant for effective functionality are listed and discussed, they include parent teachers association (PTA); community stake holders; staff and students; periodic inspection and principals should not give out any part of school plant for commercial purpose. Conclusively, since public schools harbour a large population of the Nigerian children, effort should be made to effectively manage school plant for effective teaching and learning. Some recommendations were proffered, which include updating of school plant whenever the population increases. Asiabaka (2008), maintained that school facilities management play a pivotal role in the actualization of educational goals and objectives by satisfying the physical and emotional needs of the staff and students. According to her, physical needs are met through the provision of safe structures, adequate sanitary facilities, a balanced visual and thermal environment, sufficient shelter space for work and play; while emotional needs are met by creating pleasant surroundings, friendly atmosphere and an inspiring environment. Supporting the need for effective management of facilities in schools, Fenker (2004) stated that it involves a planned process to ensure that the buildings and other technical systems support the proper discharge of operations and services within the school organization. Mbipom (2002), stated that school plant is a major component of school facilities. She further stated that since teaching and learning do not take place in a vacuum, school facilities give meaning to the planned curricular and extra-curricular activities. To her, any discussion on the school plant starts with the conceptualization of the educational programmes to be offered in the school. Thus, the nature and type of educational programmes will determine the nature and type of school plants to be provided.

Asiabaka (2008) further stated that the provision and management of school facilities must take into cognizance modern views of the teaching-learning process which have moved beyond memorizing to involvement of teachers and students in applying, analyzing, synthesizing and evaluating to stress the need for flexibility in time and space. Thus, the complexity of the learning environment requires flexibility in the design of facilities to meet present day school needs-that is, the facilities should be designed to meet diverse academic needs of the school system. According to her, in today's parlance, multipurpose facilities used for academic activities during school hours may also be available for use by the community during and after school hours. Such programmes may be used for continuing education programmes, social activities and recreation. This requires proper scheduling of such facilities to allow for accessibility to the community or other public users during school hours without interfering with academic programmes.

In Kenya before independence the missionary work became more synonymous to early mission schools. they were seen as the most important schools because of the substantial contribution they made in the establishment and development of education in Kenya (Buchmann,1999).The establishment and subsequent development of schools followed a definite pattern of standard and quality school infrastructure (Buchmann, 1999). In Kenya today the management of secondary schools is by board of management originally referred to as board of governors which came into place after independence following recommendation by the Kenya Education Commission report of Ominde, the principal as the secretary to the Board of Governors is also expected to offer technical advice on the school plant management (Ntarangwi, 2003). This aimed at giving each school its own personality and decentralization of authority for effectiveness.Education Act 211 and sessional paper No. 1 of 2005 state that the board of governors have been given the role of managing human and other resources so as to facilitate smooth operations, infrastructural development and provision of teaching and learning materials (MOEST, 2005; Kamunge, 2007).

In sessional paper No.6 of 1998, the government accepted the recommendations of the presidential working party on manpower training famously known as Kamunge report that was: members of the Board of Governors be appointed from among persons who have qualities of commitment, competence and experience which would enhance the management and development of educational institutions. The principals are to serve as the secretary to the Board of Governors and are expected to offer technical advice to the board on school plant management among other managerial issues in schools (MOEST, 2005).

There has been tremendous growth in students' population without corresponding growth in number of facilities as a result of economic depression and corresponding rise in cost. This has put much pressure on the existing facilities, thus it appears school facilities have been overstretched and made obsolete while others allowed to decay. Despite the initial training received by principals on management of school plant, secondary schools still have serious dilapidation in roofs, cracked walls, poorly maintained machinery and compound. These also happen despite the fact that the government has allocated funds for free secondary education and the parents are also paying development funds towards construction and maintenance of school plant.

For learning to be effective, the school buildings, machinery and equipment, together with the school environment must be in good conditions, well maintained, serviced and repaired. However, in Rarieda Sub-County, secondary schools have dilapidated buildings, cracked walls, poorly maintained machinery, poorly maintained compounds and fences, classrooms full of potholes on the floors, and lack of ceiling boards. This situation is compromising the health as well as security of both the learners and the staff. When facilities are not well maintained they constitute health hazards to the users of the facilities. Teachers on the other hand will not perform effectively without facilities. The student's academic performance will be negatively affected. The tone of the school will be low and human and material resources will be wasted. It is in view of the importance of school plants to the attainment of educational objectives and to minimize wastages. This study therefore sought to establish the contributions of principals in the school plant management. The objective that guided the study was to determine the contributions of principals on school machinery and equipment. The study was set to answer how the principals contribute to the school machinery and equipment management. The findings of this study were necessary to the principals of secondary schools as it provided important information concerning principals' contributions towards school plant management. The findings and recommendations were to help policy makers at different levels, that was, the TSC, Ministry of Education and Board of Management to form policies that was to enhance effective school plant management. The study focused on the contributions of principals in the school plant management in secondary schools in Rarieda Sub County. The study involved principals, deputy principals, senior teachers Parents Association Chairpersons, Board of Management Chairpersons and Sub-County Quality Assurance and Standards Officer. The study was not concerned with other contributions to school by principals other than on the management of school plant. The study was anchored on Total Quality Management Theory and used concurrent triangulation research design. This study was conducted with the assumptions that all school building maintenance and construction are under the principal's management; Management of school machinery and equipment are delegated to qualified staff under supervision of the principal; It is the mandate of the school principal to ensure that the school environment is properly managed.

This study was guided by Total Quality Management (TQM) Theory. Though TQM was adapted prior to world war II by a number of manufacturing industries, the creation of TQM philosophy is mainly attributed to William Edwards Deming (Murad & Rajesh, 2010). TQM developed as a result of attempt to eliminate the inadequacies and the inefficiencies of quality control as was practiced in industries. According to Sallis (2002), quality control is an after the event process concerned with detecting and rejecting defective item which is akin to inspection in schools. TQM incorporates quality assurance and is regarded as the process of integrating all activities, functions and processes within an organization to achieve continuous improvement and ensure total consumer satisfaction.

Since there are several approaches to Total Quality Management (TQM), the present study adopted the Deming's Approach to TQM. The theoretical essence of the Deming approach to TQM concerns the creation of an organizational system that fosters cooperation and learning for facilitating the implementation of process management practices, which, in turn, leads to continuous improvement of processes, products, and services as well as to employee fulfillment, both of which are critical to customer satisfaction, and ultimately, to firm survival (Anderson et al., 1994a). This theory is important to this study because when schools use the concept of TQM theory, the school stakeholders such as students, teachers, support staff and BOM must be consulted to monitor their expectation and satisfaction. The culture of taking preventive measures as well as solving problems as they occur should be embraced. The principal should endeavor to be part of the team that monitors and evaluates the school provision, utilization and management of educational facilities. As TQM spirit permits, all members in school should feel obliged to prevent damage and vandalism of school property.

## 2. RESEARCH METHODOLOGY

A Research design is a detailed plan on how a research study will be conducted from data collection to analysis (Babbie, 2007). Kombo and Delno (2006) defines it as a framework that explains how data will be collected and analyzed in an investigation. The study used concurrent triangulation research design within the Mixed methods approach. In this design

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the investigator collects both quantitative and qualitative data at the same time during the study and then integrates the information in the interpretation of results Creswell (2013).

Concurrent triangulation as observed by Creswell (2014) enabled the researcher to collect both qualitative and quantitative data at the same time and then compared the two databases to determine if there is convergence, differences or some combination. This model enabled the researcher to offset the weaknesses inherent within one method with the strength of other. The weight was considered equal in both qualitative and quantitative data that were collected concurrently and both happened in one phase of the research study, however, quantitative data was given more priority. The mixing ensured that the data was merged and side-by-side integration in which quantitative statistical results were discussed first followed by qualitative quotes that supported or disconfirmed the quantitative results. The design was found useful because it enabled the researcher to collect both quantitative and qualitative data at the same time. It therefore provides the most valid and accurate answers to research questions. Mixed method was chosen for this study because it gave the researcher opportunity to assess the management of school plant in Rarieda sub-county.

The study was carried out in public secondary schools in Rarieda Sub-County which is one of the twelve sub-counties of Lake Region and has a total area of 398 km<sup>2</sup>. It borders Siaya sub-county to the North, Kisumu West sub-county to the East, Bondo sub-county to the west and Suba Sub County across the lake on the South. Part of the Sub-County is covered by Lake Victoria. The district lies between latitude 0<sup>0</sup> to 30<sup>0</sup> south of equator and 30<sup>0</sup> to 34<sup>0</sup> east. The total population of the district was 108,008 as of 2009 (Rarieda Sub-County strategic plan, 2009). There are large nuclear settlements along the major landing beaches of Misori, Luanda Kotieno, and Kamariga.

The altitude of the district rises to 1,140 meters above sea level on the shores of Lake Victoria in the south and southwest and to the north and east. This area was chosen for the study because in Rarieda Sub-County, secondary schools have dilapidated buildings, cracked walls, poorly maintained machinery, poorly maintained compounds and fences, classrooms full of potholes on the floors, and lack of ceiling boards. As such the academic standards, health as well as security of both the learners and the staff are compromised. The target population consisted of 176 respondents from schools in Rarieda Sub-County. Of these respondents were 35 principals, 35 deputy principals, 35 senior masters who were directly in charge of managing school plant and are easily found in schools, and 35 PA Chairpersons and 35 BOM chairpersons who were also charged with the management of school plant, plus 1 Sub-County Quality Assurance Officer

The study used a saturated sampling technique because of the smaller study population which is manageable by the researcher since is important when there is need to capture the views of every member of the population. This is in line with Gupta (2007) who notes that if a study is able to capture the views of every member of the population then it is advisable to do a saturated sampling for accuracy of results. Out of the 35 secondary schools in Rarieda, 4 schools were selected for piloting through purposive sampling. In this case the researcher selected one boys school, one girls school, one mixed day school and one mixed day and boarding school for piloting. The study therefore used saturated sampling technique to sample a total of 31 principals, 31 deputy principals, 31 senior masters 31 BOM chairpersons, 31 PA chairpersons, plus one Quality Assurance and Standards Officer who participated in the study as informants. The total number of the sample population was be 156. The choice of the respondents was made on the fact that the selected categories were responsible for maintenance of the school infrastructure under the guidance of the principals.

**Table : Study Participants**

<b>Respondents</b>	<b>Population N</b>	<b>Sample n</b>	<b>Percentage %</b>
Principals	35	31	88.57
Deputy Principals	35	3n	88.57
Senior Master	35	31	88.57
Parents Association Chairperson	35	31	88.57
Board of Management Chairperson	35	31	88.57
SCQASO	1	1	100



The main instruments of data collection for this study were questionnaires, interview schedules and document analysis. Questionnaires and interviews were used to collect data that is not directly observable from the participants in a sample about their characteristics, experiences and opinions. Interview schedules gave opportunities for soliciting slightly more details than the questionnaires through.

Validity is the degree to which an empirical measure or several measures of concept accurately represent that topic Orodho (2005). Content related evidence of validity was used to validate the developed instruments. In this case the instruments were presented to two experts in the school of education. Their advice was used in revising the questionnaires and interview schedules before preparing the final copies. To ensure reliability of the instruments a pilot study was used to estimate the reliability. In this case, before the instruments are used, a pilot study was conducted in three secondary schools which were then excluded in the actual data collection. Pilot study should be 9-10% of the study population Creswell (2013). The purpose of piloting was to identify problems which informants may encounter in completing the questionnaires, determine whether the items in the questionnaire are clear to the informants, identify how the items will be perceived and interpreted, help to estimate time and cost of completing various phases of the research. And lastly to find out if the instruments will provide the data needed Creswell (2013). The reliability of the current study was therefore tested using Cronchbar Reliability test with the help of SPSS, V.22, which obtained a reliability coefficient of 0.87913

Before undertaking the actual study in the respective secondary schools, the researcher sought permission to conduct the research from Director of postgraduate at Jaramogi Oginga Odinga University. The letter from JOOUST helped the researcher to seek permission from NACOSTI. Before proceeding to the field the researcher made a pre-visit for introduction to schools and then book appointments for actual study. During the second visit, the researcher distributed the questionnaires and booked appointments for interviews. On the third visit, the researcher collected filled questionnaires and conducted interviews, interview with each respondent lasted for between 40 minutes to one hour. In case the respondents was unavailable the researcher booked new appointments; equally the researcher booked new appointments for collecting the questionnaires which might not have been filled at the time of data collection. The data collection process lasted for three months.

Quantitative data from closed-ended sections of questionnaires were analyzed using descriptive statistics such as frequency counts, percentages and means. Qualitative data from open-ended sections of questionnaires and interviews were analyzed for content by organizing the content into themes and sub themes as they emerge, then tallied and presented in quoted words and phrases.

To observe ethical consideration, participants were assured of making available the completed copy of the thesis if they wished to read. Participants were made aware that they had a right to withdraw from the study at any time and that their participation was voluntary as suggested by Burns (2000). The participants were promised that upon completion of the research the data and tape information will be destroyed according to Bryman (2004) and Robson (2002). On honesty and accuracy, data collected were transcribed together with verbatim quotes in the analysis maintaining the original words of the interviewees. Issues of validity and reliability were considered throughout the research process of data collection, analysis and interpretation Creswell (2014) and Bell (2003).

## FINDINGS AND DISCUSSIONS

### Response return rate

The study sampled 35 secondary schools from where 35 boarding masters/mistresses, 35 deputy principals and 35 BOM members were administered with questionnaires. Out of the issued questionnaires 32 (91.4%) school principals, 32 (91.4%) boarding masters, 31 (88.6%) deputy principals and 30 (85.7%) BOM members returned duly filled questionnaires thus giving an average return rate of 88.6%. The high response rate was realize as a result of the researcher personally going to schools and administering the questionnaires. There was also 100% interview return rates that was realized by the researcher who was making appointments with respondents and where it was not possible to meet with respondents, then new appointments were being made at the convenience of the respondents. Details of the response rate are presented in Table 4.1.

**Table: Response return rate**

Category of respondents	Sampled	Returned	Percentage
School principals	35	32	91.4%
Boarding masters	35	32	91.4%
Deputy principal	35	31	88.6%
BOM members	35	30	85.7%
<b>Total</b>	<b>105</b>	<b>93</b>	<b>88.6%</b>

**Involvement in school plant management**

The researcher sought to determine whether the respondents were involved in school plant management. This was especially important for boarding masters/mistress and deputy principals so as to be able to ascertain whether they could provide information regarding the management of school buildings and equipment. The findings are presented in Table 4.6.

**Table Involvement in school plant management (n=32)**

Statement	Response	Boarding Masters		Deputy principals	
		Frequency	Percent	Frequency	Percent
Involved in school plant management	Yes	19	59.4%	21	65.6%
	No	13	40.6%	11	34.4%
	Total	32	100.0%	31	100.0%

From the findings, majority of the deputy principals (65.6%) and boarding masters (59.4%) were involved in school plant management. However, the findings show that more deputy principals were involved in school plant management compared to boarding masters/mistresses.

During interviews with the principals, the study established that in all schools the deputy principals were involved in managing a number of school plant facilities as one principal explained;

*My deputy is the one in charge of the school bus, classrooms, school compound maintenance, facilities and equipment storage and repairs among other school plant machineries. In most cases the personnel in charge of our school machineries and grounds men are directly answerable to my deputy and the principals' office do get reports of the management of such facilities through the deputy principal's office. (P4)*

This finding confirms that the management of school plant in schools is being done through delegation of responsibilities which leads to collective responsibility. This effort by the principals enables the school plant management to be all inclusive as one principal also maintain thus;

*The boarding master in my school is the one responsible for the management of dormitories, dining hall, sick bay and school kitchen, its facilities and environmental cleanliness. My boarding master is also responsible for the security of the boarding facilities and its surrounding. I only get reports and advice on the improvements required in the boarding area. (P 21)*

**Principals' contribution in machinery management**

In the second objective, principal's contribution in machinery management was investigated where data was collected using 5-point 5-item scale scored on a scale of 1 to 5 where 1 = strongly disagree (SD), 2 = disagree (D), 3 = neutral (N), 4 = agree (A) and 5 = strongly agree (SA). The data was analyzed for boarding masters/mistresses, deputy principals and BOM members to show frequencies, percentages and mean for each scale as shown in Table 4.8.

**Table; Principals' contribution in machinery management**

<b>Boarding masters' views(n=32)</b>	<b>SD</b>	<b>D</b>	<b>N</b>	<b>A</b>	<b>SA</b>
The principal consults the technician when acquiring school machinery	0 (0.0%)	2 (6.2%)	2 (6.2%)	22 (68.8%)	6 (18.8%)
The principal follows the required procedure for acquiring school machinery	0 (0.0%)	0 (0.0%)	4 (12.5%)	28 (87.5%)	0 (0.0%)
The principal ensures prompt repair and service of school equipment	0 (0.0%)	4 (12.5%)	5 (15.6%)	21 (65.6%)	2 (6.3%)
The principal ensures correct recruitment of the users of the school machinery	0 (0.0%)	2 (6.3%)	2 (6.3%)	23 (71.8%)	5 (15.6%)
The principal always evaluates the performance of machinery for efficiency	0 (0.0%)	4 (12.5%)	2 (6.2%)	18 (56.3%)	8 (25.0%)
<b>Deputy principals' view(n=31)</b>	<b>SD</b>	<b>D</b>	<b>N</b>	<b>A</b>	<b>SA</b>
The principal consults the technician when acquiring school machinery	0 (0.0%)	0 (0.0%)	9 (29.0%)	16 (51.6%)	6 (19.4%)
The principal follows the required procedure for acquiring school machinery	2 (6.4%)	0 (0.0%)	6 (19.4%)	16 (51.6%)	7 (22.6%)
The principal ensures prompt repair and service of school equipment	0 (0.0%)	3 (9.6%)	6 (19.4%)	22 (71.0%)	0 (0.0%)
The principal ensures correct recruitment of the users of the school machinery	0 (0.0%)	0 (0.0%)	13 (41.9%)	14 (45.2%)	4 (12.9%)
The principal always evaluates the performance of machinery for efficiency	0 (0.0%)	3 (9.6%)	6 (19.4%)	19 (61.3%)	3 (9.7%)
<b>BOM's view (n=30)</b>	<b>SD</b>	<b>D</b>	<b>N</b>	<b>A</b>	<b>SA</b>
The principal consults the technician when acquiring school machinery	0 (0.0%)	0 (0.0%)	0 (0.0%)	16 (53.3%)	14 (46.7%)
The principal follows the required procedure for acquiring school machinery	0 (0.0%)	0 (0.0%)	0 (0.0%)	22 (73.3%)	8 (26.7%)
The principal ensures prompt repair and service of school equipment	0 (0.0%)	0 (0.0%)	0 (0.0%)	17 (56.7%)	13 (43.3%)
The principal ensures correct recruitment of the users of the school machinery	0 (0.0%)	0 (0.0%)	0 (0.0%)	25 (83.3%)	5 (16.7%)
The principal always evaluates the performance of machinery for efficiency	0 (0.0%)	0 (0.0%)	0 (0.0%)	19 (63.3%)	11 (36.7%)

From table 4.8, the study established that the BOM members unanimously (100%) agreed that the principal consults the technician when acquiring school machinery. As for the boarding masters/mistresses, majority(87.6%) agreed that the principal consults the technician when acquiring school machinery, this was equally supported by most (78.4%) BOM Chairpersons.

From the explanation by deputy principals captured through open ended questionnaires, it emerged that the principals consults with experts and technicians to evaluate and maintain the equipment and machinery. One of the deputy principals had this to say, that:

*With consultations with experts, the principal has been able to evaluate machinery and ensures the equipment and machinery are up to date with modern technology and are regularly repaired so as to deliver up to the required standards.(DP7)*



It means that the maintenance of machinery in school is a major responsibility of school principals. This finding agrees with Asiabaka (2008), who maintained that school facilities management play a pivotal role in the actualization of educational goals and objectives by satisfying the physical and emotional needs of the staff and students.

According to most 73.3% boarding masters/mistresses, principals do follow the required procedures for acquiring school machinery, while on their part majority 87.5% deputy principals On policies and purchases of machinery and equipment, the interview with the school principals also reiterated the role of principals as significant. Specifically, one of the school principals had this to say:

*The principals engage experts in the selection and purchase of quality machinery and equipment and developing effective policies to govern their usage and maintenance. For repairs, the principal ensures that genuine parts are used to replace old or worn out ones. In most cases the principals make use of accredited dealers to help in repair and maintenance so as to ensure long term usage of the machinery. Ensuring that ledger and journals are maintained for the school equipment and machinery to ensure accountability, usage and repair* [P 8,].

Similarly, a representative qualitative statement from one of the BOM representative also said that “*The principal ensures that every person in the school makes good usage of the machinery through holding to account those who mishandle/misuse the machinery*”. [BOM3].

From the finding above, it can be concluded that to a great extent, principals ensure that experts use the machinery in school. This finding agrees with Asiabaka (2008) who reported that equipment are available in various forms. The equipment may be fixed or movable and they serve various purposes in the educational system. Similarly, Asiabaka (2008), maintained that school facilities management play a pivotal role in the actualization of educational goals and objectives by satisfying the physical and emotional needs of the staff and students.

Principals also contribute to school machinery and equipment by developing policies that govern the usage and maintenance. This is to avoid cases of misuse of machinery and also wastage of resources in school. This is because one of the roles of the school principal is to ensure prudent management of school resources. One respondent reported that:

*“principals have task of developing policies that govern the usage of school property like buses, classrooms, vehicles and any other machinery in school”* (SCQASO)

From the excerpt, it can be concluded that the principals are expected to develop policies that would well enhance appropriate usage of the school plant and machinery. This finding agrees with Ninikanwa (2014) study which revealed that principals should plan for the use of direct labour to reduce cost and plan for the economy of land as site of new buildings. The result indicated that principals should register the school under co-operate society through which building materials can be procured at a cheaper rate or hire purchase rates, and organize orientation for both staff and students on utilization of school buildings. This finding agrees with Asiyai (2012) in a study in the delta state Nigeria which emphasized that both teachers and students need to take part in the management of school machinery and equipment. Students need to be concerned on the management of equipment which helps to aid learning in schools.

This finding further concurs with Asiabaka (2008) who further stated that the provision and management of school facilities must take into cognizance modern views of the teaching-learning process which have moved beyond memorizing to involvement of teachers and students in applying, analyzing, synthesizing and evaluating to stress the need for flexibility in time and space.

Table 4.8 also reveals that principals do ensure prompt repair and service of school equipment as indicated by some (53.3%) Boarding Masters/Mistresses, while 71% of deputy principals and most 81.3% of the BOM also agreed that principals do ensures prompt repair and service of school equipment. From the qualitative findings, Principals also ensure appropriate maintenance practices and replacement of parts of the school equipment and machinery. This would ensure that long life of the school machinery due to regular maintenance of the school machinery and equipment. One respondent reported that:

*“Principals ensure that genuine parts are used when replacing old or worn out parts of the machinery. At times utilizing the dealers to help repair the machinery so as to ensure their long term use”* (SCQASO)

This would go a long way in ensuring that the school machinery and equipment would last long. This finding agrees with Ninikanwa (2014) who reported that principals should plan for the use of direct labour to reduce cost and plan for the economy of land as site of new buildings.

As per whether principals do ensure correct recruitment of the users of the school machinery, majority (83.3%) of the Boarding Masters/Mistresses agreed, (63.3%) deputy principals also agreed. The principals also contribute to the school machinery and equipment by engaging experts in the purchase of school machinery to be bought by the school. This is to ensure that the school does not buy low quality machinery or inappropriate ones. One respondent reported that:

*“Principals have a duty to engage experts in the selection and purchase of quality machinery and equipment” (SCQASO)*

From the respondent above, this is to ensure that only useful machinery of high quality are purchased by the schools. This finding agrees with Asiyai (2012) in a study in the delta state Nigeria which emphasized that both teachers and students need to take part in the management of school machinery and equipment. Students need to be concerned on the management of equipment which helps to aid learning in schools.

From the table, Principals always evaluates the performance of machinery for efficiency according to most (63.3%) Boarding Masters, majority (87.5%) deputy principals, and were supported by majority (92%) BOM. Principals also ensure school machinery and equipment are well maintained by supervision of the usage of various equipment in school. This would ensure that the equipment purchased by the school last for longer durations. This shows that the BOM members were satisfied that the principals were doing enough in school machinery and equipment management. This finding agrees with Asiabaka (2008), who maintained that school facilities management play a pivotal role in the actualization of educational goals and objectives by satisfying the physical and emotional needs of the staff and students. One respondent reported that:

*“Principals are to constantly supervise the usage of all the school equipment and various machinery in school to ensure that they are well maintained” (SCQASO)*

From the excerpt above, it can be concluded that principals have a duty to supervise the usage of school machinery. This finding agrees with Asiabaka (2008) who stated that the provision and management of school facilities must take into cognisance modern views of the teaching-learning process which have moved beyond memorizing to involvement of teachers and students in applying, analyzing, synthesizing and evaluating to stress the need for flexibility in time and space.

The deputy principals also acknowledged that principals contribute greatly to school machinery and equipment management. This emerged as one of the deputy principals noted that:

*The principal involves the procurement committee in the purchase of school equipment and machinery. Further, the principal assigns responsibilities to a teacher in charge of supervision, collection, repairs and maintenance of damaged equipment and machinery. Moreover, to ensure proper use of the equipment and machinery, the principal announces vacancies, vets applicants and recruits only qualified persons to be using the machinery and equipment. [DP29].*

However, there were significant proportions of deputy principals who were neutral regarding the statements thus indicating that the deputy principals were not absolutely sure as to whether the principals were doing enough in the management of school machinery and equipment. This finding agrees with Ninikanwa (2014) study which revealed that principals should plan for the use of direct labour to reduce cost and plan for the economy of land as site of new buildings.

The result indicated that principals should register the school under co-operate society through which building materials can be procured at a cheaper rate or hire purchase rates, and organize orientation for both staff and students on utilization of school buildings. The study recommended that principals should consult design experts before and during the construction of new buildings and that principals should appoint capable technical personnel for regular inspection of school buildings.

The findings shows that the respondents were aware of the significant contribution school principals in the management of school machinery and equipment. This finding disagrees with Anderson (2015) in Amsterdam who reported that most institutions were managed by the government supervisors and that machinery and equipment in the institutions were always inspected by various government officials who were directly trained in those areas and whose offices were to ensure quality service and maintenance in order to avoid risking the lives of those concerned.

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This view was also shared by SCQASO who reported that principals actively engage in recruitment of personnel to maintain the school equipment and machinery as well as identify required machinery and manages the effective use of machinery through assigning individuals. During the interview, the SCQASO explained that:

*The principal recruits qualified personnel to use and maintain the machinery. The principal also proposes to the BOM the need for particular machinery for better service provision and efficiency in the school. Moreover, the machinery and equipment are assigned to specific individuals to ensure accountability and proper usage and maintenance by the relevant officers in charge. The principal constantly supervises the usage of various machinery and equipment in the school and ensures that they are well maintained. [SCQASO]*

From the excerpt, it can be concluded that the principals actively engage in the process of recruitment of personnel. This finding agrees with Asiyai (2012) in a study in the delta state Nigeria who reported that Students need to be concerned on the management of equipment which helps to aid learning in schools. The study also pointed out that school machinery and equipment help transact student affairs and also to gather them for social purposes. Teachers need school equipment for diagnosis of students' needs, and facilities for preparing instructional presentation. The complexity of the learning environment requires flexibility in the design of the school plant.

### SUMMARY OF FINDINGS

The findings from questionnaire shows that the respondents were aware of the significant contribution school principals in the management of school machinery and equipment. The findings specifically show that the BOM members cumulatively (agree and strongly agree) unanimously (100%) agreed that the principal consults the technician when acquiring school machinery, follows the required procedure for acquiring school machinery, ensures prompt repair and service of school equipment; ensures correct recruitment of the users of the school machinery and always evaluates the performance of machinery for efficiency. However, there was disagreement with the statements in some cases few respondents disagreed that the principal consults the technician when acquiring school machinery, that the principal ensures prompt repair and service of school equipment, that the principal ensures correct recruitment of the users of the school machinery and that the principal always evaluates the performance of machinery for efficiency.

From the qualitative findings, principals actively engage in recruitment of personnel to maintain the school equipment and machinery as well as identify required machinery and manages the effective use of machinery through assigning individuals. The principals also contribute to the school machinery and equipment by engaging experts in the purchase of school machinery to be bought by the school. This is to ensure that the school does not buy low quality machinery or inappropriate ones. Principals also contribute to school machinery and equipment by developing policies that govern the usage and maintenance. This is to avoid cases of misuse of machinery and also wastage of resources in school. This is because one of the roles of the school principal is to ensure prudent management of school resources. Principals also ensure school machinery and equipment and well maintained by supervision of the usage of various equipment in school. This would ensure that the equipment purchased by the school last for longer durations. School principals also ensure proper accounting procedures are in place for the school machinery and equipment. This is to ensure proper accountability in the usage of the school machinery and repairs. This would in a long run make sustainable use of the school machinery. Principals also ensure appropriate maintenance practices and replacement of parts of the school equipment and machinery. This would ensure that long life of the school machinery due to regular maintenance of the school machinery and equipment.

### CONCLUSION

Based on the objective, it can be concluded that, respondents were aware of the significant contribution school principals in the management of school machinery and equipment. There was disagreement with the statements in some cases few respondents disagreed that the principal consults the technician when acquiring school machinery, that the principal ensures prompt repair and service of school equipment, that the principal ensures correct recruitment of the users of the school machinery and that the principal always evaluates the performance of machinery for efficiency. Principals actively engaged in recruitment of personnel to maintain the school equipment and machinery as well as identify required machinery and manages the effective use of machinery through assigning individuals. The principals also contribute to the school machinery and equipment by engaging experts in the purchase of school machinery to be bought by the school.

### RECOMMENDATIONS

Based on the foregoing conclusion, the study made the following recommendations;

- (i) The Ministry of Education in Kenya should enact regular in-service courses for School Board of Management Chairpersons on the management of school plant. This would make school Board of Management to be updated on best ways of management of school plant and utilization of machinery.
- (ii) The University Management and Colleges should develop curricula in their training programs on school machinery and equipment management. This would ensure that teachers would undergo training to be equipped with technical skills in school plant management.
- (iii) The Ministry of Education should set up a Committee or Agency to oversee the effective and regular maintenance of school plant in each school. This would ensure that all schools have uniform and standardized implemented ways of school plant management.

### Suggestion for Further Research

On the basis of the study findings and recommendations, further research could be carried out on the following topic:-

- i. Role of Teachers Service Commission on effective school machinery and equipment management.
- ii. Effectiveness of Education Policies on School environment and disaster management.

### REFERENCES

- [1] Adaralegbe, A. (2009) *Secondary education in Nigeria. Nigerian education, trends and issues. Ile life university of life press.*
- [2] Adebayo, F.A. (2009). "Parent preference for private schools in Nigeria". IJES, vol. no. 1, pp 1-6.
- [3] Adeboye, R. (2000). *A practical approach to effective utilization and maintenance of physical facilities in secondary schools, In J. O. Fadipe & E. Oluchukwu (eds). Education planning and administration in the 21<sup>st</sup> century. Ondo NIEPA.*
- [4] Aduda, D. (2001), *KCSE results were shocking, Daily Nation Newspaper September 13th, Nairobi: Nation Media Group P. 14*
- [5] Agbonye, C.O. (2006). *Physical Facilities in Secondary Schools in Owerri Education Zone of Imo State. Unpublished M.Ed. thesis Imo State University, Owerri.*
- [6] Agoha, R. C. (2008). *Administrative Strategies for School Plant Maintenance in Secondary Schools in Okigwe Education Zone. Published Research Project, University Of Nigeria, Nsukka.*
- [7] Aina, S. (2014) *School environment and pupils satisfaction with schooling in ondo state, Nigeria. An unpublished doctoral thesis submitted to the department of educational administration and planning, University of Benin, Benin city.*
- [8] Alimi, G.B. Ehinola, O. S. & F.O. Alabi, (2012). "School types and academic performance of students in Ondo State, Nigeria". *School Administration and Management*, vol. 1. no. 1 2012, pp 19-41.
- [9] Amanchukwu, R.N. & Ololube, P. N. (2015). *Managing School Plant for Effective Service Delivery in Public Secondary Schools in Rivers State of Nigeria. Human Resource Management Research 2015, 5(4): 95-102 DOI: 10.5923/j.hrmr.20150504.02*
- [10] Anderson, J. C., Rungtusanatham, M., & Schroeder, R. G. (1994). A theory of quality Management underlying the Deming management method. *Academy of Management Review*, 19(3), 472–509.
- [11] Anike, L.O. & Tari, G.N. (2011). *Provision and Management of School Facilities for the Implementation of UBE Programme. Journal of Educational and Social Research Vol. 1 (4), 47-57.*
- [12] Asiabaka, I. P. (2008). *The need for effective facilities management in Nigeria. New York Science Journal. http://www.sciencepub.org.*

**International Journal of Novel Research in Humanity and Social Sciences**

 Vol. 6, Issue 5, pp: (73-88), Month: September - October 2019, Available at: [www.noveltyjournals.com](http://www.noveltyjournals.com)

- [13] Asiyai, R. (2012). *Assessing school facilities in public secondary schools in delta state Nigeria. An international multidisciplinary journal, Ethiopivol.6 (2) serial no 25.*
- [14] Association of secondary teachers of Ireland, (2004). Retrieved from [www.sess.ie/..teacher.../asti-Association](http://www.sess.ie/..teacher.../asti-Association).
- [15] Ayoo, S. (2002). "An Investigation of the Factors influencing K.C.S.E. Performance in Kisumu district". Unpublished Med. Thesis. University of Nairobi.
- [16] Babatope, A.B. (2010). Problems of facilities in South-West Nigerian universities and the way forward. *Journal of Education Administration and Policy Studies* Vol. 2 (2), pp. 039-043.
- [17] Bell, J. (2007). *Doing research project a guide for first time researchers in education, health and Social sciences.* England Maiden –open university.
- [18] \_\_\_\_\_ (2003). *Educational management and administration.* Journal of the British education leadership management. Administration society. Vol.3
- [19] Bowen, G.A. (2009). Documentary analysis as a qualitative research method. *Qualitative research journal.* Vol 9 (2):27-40
- [20] Braur, V. & Clarke, V. (2006). Using thematic analysis in psychology. *Quantitative Research* Vol 3 (77- 101)
- [21] Bray, M. & Lillies, K. (2004). *Parents teachers associations.* Retrieved from [www.heran.org/html/.../15 Nwakaire.pdf](http://www.heran.org/html/.../15 Nwakaire.pdf).
- [22] Brayman, A. (2008). *Social research method.* 3<sup>rd</sup> Edition. New York: Oxford University press.
- [23] Bulama, K.H., (2000). Development of functional facilities for a sustainable universal basic education programme. Maiduguri. *Journal of Educational Studies*, 3(4): 25-30.
- [24] Burns, R. (2000). *Introduction to Research Methods.* London Sage publication.
- [25] Castaldi, B. (1994). *Educational facilities: Planning Management & Modernization.* Needham Heights, MA: Allyn & Bacon.
- [26] Cheruiyot, P. (2005) *Policy sought on changes on schools.* *Daily Nation Newspaper* April, 25th). *Nairobi: Nation Media Group P.21.*
- [27] Chidobi, R.U. (2016). Qualitative Education and Public School Facilities: The Roles and Challenges of Public School Administrators. *American Research Journal of Educational Research* 2016. Vol. 2, No. 1, 1-10
- [28] Cohen, I. Manion, L. & Morrison. (2007). *Research methods in education.* London Routledge Falmer
- [29] Creswell, W. (2013). *Research Design; Qualitative, Quantitative, and Mixed Methods Approaches* (4<sup>th</sup> edition). Sage publication. New York.
- [30] Deming, P. (1986). 14 Points for Management: Framework for Success. *Journal of the Royal Statistical Society. Series D (The Statistician)*, Vol. 36, No. 5, Special Issue: Industry, Quality and Statistics (1987), pp. 561-570.
- [31] Denzin, N. & Lincoln, Y. (2000). *Collecting and interpreting Quantitative materials* London sage
- [32] Durosaro, D.O. (1998). *School Plant Management practice in Nigeria: Trends Issues and Problems.* In A.A. Olagboye, J.O. Fadipe (Eds). *Management of Nigerian Education: Project Monitoring and School Plant Maintenance*, Ondo: NEPA
- [33] Duwiejua, M. & Newman, E. (2014). *Funding of higher education for innovative funding of higher Education in Africa, The case in Ghana.* Retrieved from [slideplayer.com/slide/4061169/](http://slideplayer.com/slide/4061169/)
- [34] Earthman, G. (2002). *School facilities conditions and student academic achievement.* Retrieved from [www.ideas.gseis.vcia.edu/publications](http://www.ideas.gseis.vcia.edu/publications)
- [35] Ebenezer, B. (2004). *A Stitch in Time Saves Nine: Cultivating a Maintenance Culture in Ghana.* [www.ghanaweb.com](http://www.ghanaweb.com) Ghana home page/News Archive Retrieved August 2nd, 2009.



**International Journal of Novel Research in Humanity and Social Sciences**

 Vol. 6, Issue 5, pp: (73-88), Month: September - October 2019, Available at: [www.noveltyjournals.com](http://www.noveltyjournals.com)

- [36] Egim, S. (2003). School Environment and Administrators role performance in cross River state secondary schools. An unpublished doctoral thesis submitted in the department of educational Administration and planning, University of Calabar Nigeria.
- [37] Enahwo, J. O., & Eferakeya, O. A. (1989). Educational Administration: Ibadan. Paperback Publishers. Ajayi, J. A. (2007). Issues in school management, Lagos: Bolabay Publisher.
- [38] Enohwa, J. & Eferayeka, O. (1998). *Educational Administration*. Ibadan: paperback Publishers.
- [39] \_\_\_\_\_ (1989). Educational Administration: Ibadan. Paperback Publishers.
- [40] Federal Republic of Nigeria, (2004). *National Policy on Education Lagos*: Federal Government Press
- [41] Fenker, M (2004). Organizational change, representations and facilities. In facilities management: innovation and performance. Alexander, K (ed.) UK, Taylor Francis
- [42] Filardo, M. (2008). *Good buildings, better schools. An economic stimulus opportunity with long- term benefits*. Retrieved from [www.sharedprosperity.org](http://www.sharedprosperity.org).
- [43] Gall, M. & Borg. W (1989). *Educational research: an introduction (8th ed.)*. upper saddle River, Ally and Bacon.
- [44] Glewwe, P. & Kremer, M. (2006) *Handbook of development Economics*. Retrieved from <https://books.google.com/books?isbn=0444531009>
- [45] GOK (2008). Circular MOE/G1/9/1/44. Guidelines for implementation of Free Secondary Education. Kenya, Nairobi. Dated 9th January, 2008.
- [46] \_\_\_\_\_ (2005). Kenya Education Sector Support Programme 2005-2010, Ministry of Education, Science and Technology. Nairobi: Government Printers.
- [47] \_\_\_\_\_ (2004). Development of Education in Kenya. Ministry of Education, Science and Technology. Nairobi: Government Printers.
- [48] Gogo, K. (2002). "Input of cost sharing on access, equity and quality of secondary education in Rachuonyo District". Unpublished ME.d. Thesis, Kenyatta University.
- [49] GOK (2009). Education facts and Figures; 2002-2008. Ministry of Education. EMIS, Kenya. Nairobi: Government Printers.
- [50] Griffin, R. (2003) *Fundamentals of management: core concepts and applications*. New York: Houghton miffin company.
- [51] Gumbi, Daphne (2009). The management of physical resources by principals in the rural secondary schools of the Eastern Cape Province, South Africa. Published MED Thesis, Nelson Mandela Metropolitan University.
- [52] Hindle, D. (2014) *The funding and financing of schools in South Africa*. Retrieved from [www.cedol.org/wp.../148-150-2007.pdf](http://www.cedol.org/wp.../148-150-2007.pdf).
- [53] Hines, E. (1996) *Building condition and student achievement and behavior*: Ph D dissertation, Virginia Polytechnic Institute and state university united states.
- [54] Ikoya, P. & Onoyase, D. (2008). Universal Basic Education In Nigeria: Availability of Infrastructures for Effective Programme Implementation. *Educational Studies*.
- [55] Isaac, A. A. & Musibau, A. Y (2010). *School plants planning and students learning outcomes in S. W. Nigeria secondary schools. Ado Ekiti, Kamala Raj*.
- [56] John, S. (2000). *Public/ private finance and development: Methodology, Deal structuring, Developer Solicitation*.
- [57] Kosgey, Z , Maiyo A. and Chepkurui R (2006) "Challenges of financing secondary school Education " in the Educator (2006) Eldoret, MUP.

**International Journal of Novel Research in Humanity and Social Sciences**

 Vol. 6, Issue 5, pp: (73-88), Month: September - October 2019, Available at: [www.noveltyjournals.com](http://www.noveltyjournals.com)

- [58] Lawson, Olukemi, Gede, Ngozi. (2011). *Provision and Management of School Facilities for the Implementation of UBE Programme* Vol 1 (4)
- [59] Mabeya, T (2010) *Role of church sponsor in management of secondary schools: impact on academic performance and conflict concerns in Kenya* (online) downloaded on 13<sup>th</sup> december 12<sup>th</sup> from [http:// www.academicjournals.org/jeaps/-----mabey% 20et%](http://www.academicjournals.org/jeaps/-----mabey%20et%20)
- [60] Manson, M. (2010) Sample size and saturation in PHD studies using Qualitative interview. *Forum Qualitative Social Research* Vol 11(30). Retrieved from <http://www.nbn-resolving.de/urn:nbn:de:um:de:0114-fgs-100387> on may 20<sup>th</sup> 2014
- [61] Maree J. (2012). *Career counselling in the 21st century. Merging quantitative approach to facilitate Best practices*, Special issue of the copy right. *Journal of Education Science* Vol 7(1)1-4 MOEST (2005).
- [62] McGowan, R. (2007). *The impact of school facilities on student achievement, attendance, behavior, completion rate, and teacher turnover rate in selected Texas high schools*: Ph D dissertation, Texas A and M university, United States.
- [63] Mirza (2008) *Nigerian children die in a wall collapse* .Mail and Guardian newspaper on 26<sup>th</sup> march 2008.
- [64] Mitchell, S. (2008). “*Study Habits & Test Anxiety*”. *Mental Health, Wellness and Safety*
- [65] Promotion. Resources for Students. University at Buffalo. <http://ubcounseling.buffalo.edu/stressstudy.shtml>
- [66] Mkongo, P. (2013) *Challenges faced by board of governors in secondary school management. A case of Taita Taveta county –kenya*. Retrieved from [taitatavetaeducationboard.com/level...](http://taitatavetaeducationboard.com/level...)
- [67] Monyatsi, Perci Pedzoni, (2005). *International Education Journal*, Shannon Research Press.
- [68] Moore, D. and Warner, E. (1998). *Where children learn: The effect of facilities on student's Achievement* CEFPI issue Track, 1-4
- [69] Mugenda, O. & Mugenda, A. (2003). *Quantitative and Qualitative Approaches*. Nairobi: Acts Press.
- [70] \_\_\_\_\_ (2000), *Modernizing our schools* Washington D.C.
- [71] Murphy, P. (1998). *Tourism and Sustainable Development*, in W. Theobald (Ed.), *Global Tourism*, (2nd ed.). Oxford, UK: Butterworth Heinemann
- [72] Musau, S. (2004). “*Factors Influencing Pupils Performance in K.C.P.E in Central Division, Machakos District*” Unpublished M.Ed Thesis. University of Nairobi.
- [73] Mutuku, E. (2012) *The role of the board of governors in the management of secondary schools in Kasikeu Division Zauzi District Kenya*. Retrieved from [www.puribooks.com/.../roles-of-board-of...](http://www.puribooks.com/.../roles-of-board-of-...)
- [74] National Parent Teachers Association, (2008). *Goals 2000: Educate America Act*- retrieved from [www.ota.org](http://www.ota.org)
- [75] Ninikanwa L. O. (2014). *Effective Practices in the Management of School Plant in Secondary Schools in South-East Nigeria*. PhD Thesis, in *Educational Administration and Planning*, University Of Nigeria Nsukka.
- [76] Nwankwo, E. (2007). *Facility Acquisition and Maintenance in Secondary Schools in Abia State*. Unpublished M.Ed. Thesis University of Port arcourt.
- [77] Nwokike, S.C. (2012). *Management of School Plant by Principals in Nsukka Education Zone of Enugu State*. Phd In *Educational Administration And Planning*, University Of Nigeria, Nsukka. No Child Left Behind Act, 42 S9101 (2002)..
- [78] Oduor, J and Nyamu P (2004, sept 18th ). *Who is to blame for the KCSE results’?* *Daily Nation Newspaper. Nairobi, Nation Media Group*, P 17.
- [79] Ogbuanya E. O. (2017). *Innovative practices in management of school plant in secondary schools in Nsukka Education Zone of Enugu State*. Retrieved from: <https://www.google.com/#q=role+of+principals+in+management+of+school+buildings+in+nigeria&start=10>

**International Journal of Novel Research in Humanity and Social Sciences**

 Vol. 6, Issue 5, pp: (73-88), Month: September - October 2019, Available at: [www.noveltyjournals.com](http://www.noveltyjournals.com)

- [80] Ojelede, P. K. (1998). Maintenance school plant for educational effectiveness and efficiency in a depressed economy. In Olagboye, A. A., & Fadipe, J. O. (Eds). *Management of Nigeria Education*, Ondo: Project Monitoring & school plant maintenance. Ondo: NIEPA.
- [81] Olagboye. A. (1998). *Promoting school plant maintenance culture in the Nigeria school system*. Ondo – Nigeria: (NIEPA).
- [82] Olagboye, A. and Fadipe, J.(2004)*Management of Nigeria Education: project monitoring and school plant maintenance* Ondo NIEPA.
- [83] Olaniyan, O. D., & Kolawole I.A. (2013). Effect of Inadequate School Plant on Academic Performance of Nigerian Secondary School Students. *International Journal of Humanities and Management Sciences (IJHMS)* Volume 1, Issue 3 (2013), 23-33.
- [84] Okumbe, J. (1998), *Educational management Theory and Practice*. Nairobi University Printer.
- [85] Orodho, J. (2004). *Techniques of writing Research Proposals and Reports in Education and Social Sciences*, Nairobi, Masola Publishers.
- [86] Owuamanam, D. (2005) *Threats of academic integrity in Nigerian universities*. Lead paper presented at the conference of the national association of educational research and evaluation. University of Ado –Ekiti, June 13<sup>th</sup>-17<sup>th</sup> 2005.
- [87] Raburu, P. (2015). Motivation of women academics and balancing family and career. *Journal of Education and social research*. Vol.5:359-370
- [88] Rejeh, J.N. (2008). *Management and Utilization of Educational Facilities for the Implementation of the UBE Programme in River State*. Unpublished M.Ed. Thesis University of Port-Harcourt.
- [89] Robson, S. (2002). *Real World Research*. Oxford Blackwell
- [90] Shah, D (2003) *Countryreport on Decentralization in the Education system of Pakistan: policies and strategies*. Government of Pakistan, Islamabad.
- [91] Schneider, M (2002). *Do school facilities affect academic outcome?* Washington, DC: national clearinghouse for education facilities. [www.edfacilities.org](http://www.edfacilities.org)
- [92] Uko, E.S. (2015). Principalship and Effective Management of Facilities in Secondary Schools In Cross River State, Nigeria. *International Journal of Academic Research and Reflection* Vol. 3, No. 1, 2015, 64-77.
- [93] UNICEF and Department of public health engineering DPHE (1992). *Sanitation in primary school (plan of action)* Dhaka, Bangladesh, UNICEF.
- [94] Wamunyu, J.K. (2010). Challenges Facing Public Secondary School Heads in the Management of School Projects: A Case of Mathira Constituency. Master of Business Administration (Project Management) Of Kenyatta University.
- [95] Wengrof, T. (2001). *Quantitative research intensifying* .London sage.
- [96] World Bank (2003). *Education Notes: Education for All building the schools*
- [97] Yusuf, M. A. (2008). School Plant Planning and Secondary School Students’ Learning Outcome in South West Nigeria. PhD dissertation. University of Ado Ekiti.
- [98] Yusuf, Musibau Adeoye & Adigun, Johnson Tayo (2012). The Role of Head Teacher in Improvisation and Maintenance of School Plants. *An International Multidisciplinary Journal, Ethiopia* Vol. 6 (3), Serial No. 26, 232-239