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An assessment of the effectiveness of the preventive maintenance policy in enhancing quality assurance in education provision: A case of selected primary schools in Chibombo District, Zambia

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Abstract

The purpose of this study was to investigate on an assessment of the effectiveness of the preventive maintenance policy in enhancing quality assurance in education provision: a case of selected schools in Chibombo district. The study employed a mixed paradigm and descriptive survey design that sampled DEBS officials, Head teachers, PMS coordinators, teachers and pupils. Data was obtained from respondents by means of interviews, questionnaires and observation checklist. The target population was 1280 respondents while the sample size was 128 respondents. Frequency, percentages, tables, graphs and pie-charts were used to analyze the quantitative and qualitative data obtained. Data was then analyzed manually in some cases and also, a combination of software MS Access and MS Excel. According to the findings, the study found that the activities which was in place was general cleaning one day per week. The study also found that discontinuity was the biggest challenge administrators experienced, and that many projects were abandoned. Unfortunately, the motto that "prevention is better than cure" was not evident among teachers and learners. The conclusion of this study with respect to the application of ethical theories to the findings is that the inner ethical motivation required for adequate care of property in teachers and learners is missing. The study therefore recommended that there is a need for greater emphasis to be placed on character formation in education as is specified in the *Zambian Document Educating Our Future*. Also, the spirit of the PMS policy directives needs to be more greatly emphasized in order to motivate action, rather than the more exclusive legal dimension which does not suffice to ensure the implementation of the policy.

Keywords: Assessment; Education Provision; Effectiveness; Preventive Maintenance Policy; Quality Assurance; Schools

1. Introduction

Every aspect of education is important. Education is at the core of development in modern societies. In the light of on-going progressive development at any point in time, there is need to ensure that the citizens are equipped with adequate and appropriate knowledge, skills and values which are necessary for survival of society and the generation as a whole. Education therefore will remain an integral component in human development across the globe. In modern times, the Governments worldwide institutes policies that aim to safeguard welfare of its citizens and also support the ideologies of its political agenda. However, the different education policies which are implemented have a great bearing on the quality of education services. The successful implementation of any public policy has a bearing on manner it was formulated (Szuba & Young, 2014). A policy which would have a wider consideration on the pros and cons would to a greater extent be a successful undertaking.

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What is Government policy? According to Griffin & McGaw (2019) "the term government policy or the public policy, simply means an institutionalized proposal or a decided set of elements like laws, regulations, guidelines and actions to solve or address relevant and would be challenges or problems, guided by the conception and often implemented by programs." Furthermore, Akram, et al (2023) describes that "the term government policy can be considered to be the sum total of a government's direct and indirect activities and has been conceptualized in a variety of ways." Additionally, the government policy or policies are created and or enacted on behalf of the public typically by the government. Although, sometimes in some other countries policies are made by nonprofit organizations or are made in co-production with communities or citizens who may include key potential experts, scientists, engineers and stakeholders. By and large the government policies are made by policy-makers affiliated with (in democratic politics) currently elected politicians. Therefore, the policy process is a complex political process in which there are many actors such as the elected politicians, political party leaders, pressure groups, civil servants, public employed professionals, judges, non-governmental organizations, international agencies, academic experts, journalists and even sometimes citizens who see themselves as the passive recipients of policy.

Al-Turki (2017) says that policies are rules, principles, guidelines or frameworks that are adopted or designed by an organization to achieve long-term goals. These are usually set out in a written format that is easily accessible. Policies are formulated to direct and exert influence on all the major decisions to be made within the organization and keep all activities within a set of established boundaries. Every government creates public policy at all levels, in Zambia this include national, provincial and district levels. These public policies are developed through a process that involves input from citizens, government staff, and elected officials. These policies help to address specific issues or problems. All ministries and government departments are run on the bases of these policies.

Policies are the basis for making decisions especially in politics, organizations or business. One of government's highest priorities is to provide a quality education for learners attending government schools. The government wants these students to receive quality education and the opportunity to succeed regardless of where they live or their socio-economic background. Policy No. 1 on Access and Participation states that, "The goal of the Ministry of Education is that every child should have access to nine years of good quality education (MoE, 1996). Preventive Maintenance System (PMS) policy is one of a number of policies in the Ministry of Education. It is an intervention program in schools that tries to ensure that the school surroundings, infrastructure, and equipment are taken care of for the health and safety of both staff and learners. It is pertinent to the efficient running of the school if the system is to fulfil its intended function (Palma et al., 2020). Members of staff, learners and the community are expected to take an active role in ensuring that the facilities in the school are cared for, as a means of enhancing high learner performance.

Oluwatoyin (2014) narrates that Preventive Maintenance is one of the programs run in schools. Basically Preventive maintenance is concept adapted from the industry and deals with regular maintenance of equipment and machinery in an organization. The scheduled program to maintain equipment and assets help to keep them in good working order and therefore prevent possible eventualities such as breakdowns and equipment failure. Similarly, schools also run preventive maintenance program through the school preventive committee to ensure that the school's physical asset mainly infrastructure, equipment and environment which support teaching and learning are looked after properly. It is important to appreciate that the concept of preventive maintenance in an industry is meant to enhance the productivity by extending the asset life of the plant and machinery and also reducing the general cost spent on maintenance tasks. Similarly, Preventive Maintenance (PM) in schools also help to support the effective delivery of education ensuring that all physical items in the school environment are well looked after (US, MoE, 2014).

Preventive maintenance is simply the process of checking, inspecting and repairing any broken-down equipment, furniture or infrastructure to maintain it to good standard as the institution requirement so as not to degenerate to low standard levels. According to the Encyclopedia of Architecture, Preventive maintenance is the regular and routine maintenance of equipment and assets in order to keep them running and prevent any costly unplanned and downtime from unexpected equipment failure." In addition, Abogrean & Latif (2019) says that "preventive maintenance is the act of performing regularly scheduled maintenance activities to help prevent unexpected failures in the future." In addition, we can say, it is about fixing things before they completely break to avoid big costs. Furthermore, preventative maintenance is a maintenance strategy with a proactive approach contrary to a reactive approach. In this regard preventive maintenance follows routine implying that tasks are performed following a present schedule. Preventive maintenance is used to anticipate and prevent the breakdown of equipment, infrastructure, or things and should ideally be performed on all items of equipment to prevent age-related failure. Achieving this objective requires high quality teaching, a challenging and appropriate curriculum, and facilities which adequately support learners, teachers, the curriculum, parents and the school community. The term 'facilities' refers to the site within which the school is located, the buildings located on the school grounds, the permanent fixtures, doors, windows, and lighting systems fitted within

school buildings, moveable equipment, such as the furniture and information technology assets, placed within school buildings (Alabdulkarim, et al, 2016).

In Zambia, it can confidently be said that all schooling (formal education) between grades 1 and 7 is done in a school set up. A school is an institution designed to provide learning spaces and learning environments for the teaching of students (or "pupils") under the direction of teachers. Zambia like most countries has a system of formal education, which is commonly compulsory. In these systems, students' progress through a series of schools. The names for these schools vary by country but generally include pre-school or early childhood education, primary school for young children and secondary school for teenagers who have completed primary education. An institution where higher education is taught is commonly called a university college or university (CDC, 2016). It is therefore cardinal that such institutions are safe if they are to perform the functions for which they were intended.

1.1. Statement of the Problem

All or most of learning in formal education in Zambia takes place in the school environment. The school environment includes buildings, facilities (such as machines), and grounds. According to Rolston (2015), school facilities consists of the physical structure and the variety of building systems Like, plumbing, mechanical, electrical and power telecommunications, security and fire suppression systems on the one hand, and on the other hand, school facilities consists of furnishings, materials and supplies, equipment and information technology as well as various aspects of the building grounds. Considering that in the school are found many lives of pupils and teachers, it is therefore crucial that all infrastructures should meet certain safety and health standards. Such health standards can be met by constant inspections, culminating to preventive, corrective, and predictive maintenance. Berry (2020) indicates that inspections should start with simple observations of the inside and outside of the school, simply walking around the interior and the exterior looking at it carefully. These regulations ensure that buildings are well maintained to ensure that they are structurally safe in order to provide a safe environment to live in and ensure that they are not a danger to the health of occupants. Equally the facilities must be in a condition that ensures that they are functionally sound and meet the expectations of the users. The Preventive Maintenance is a policy of the Government that has been instituted to try and improve the physical learning environment. It is supposed to ensure that the upkeep and maintenance of educational facilities is done regularly if the buildings and other facilities are not to deteriorate rapidly, (MoE, 2023). Regular maintenance is important because it can constitute savings on costs. It is within this framework, therefore, that this study shall be executed with the view of conducting an assessment of the effectiveness of the Preventive Maintenance policy in primary schools, in enhancing quality assurance in the provision of education.

The Purpose of the Study

The purpose of the study was to assess the effectiveness of the preventive maintenance policy in enhancing quality assurance in education provision in selected primary schools of Chibombo district, Zambia.

Research Objectives

The objectives of the study were to:

- Establish the activities that are done during preventive maintenance system (PMS.) in selected primary schools of Chibombo district, Zambia.
- Evaluate the challenges experienced by the administrators in the execution of preventive maintenance system (PMS.) in selected primary schools of Chibombo district, Zambia.

1.2. Conceptual Framework

A conceptual framework is a visual or written product that explains graphically or in narrative the main things to be studied such as key factors, concepts or variables and the presumed relationships, among them. All the elements outside the system have the potential to affect quality education (Lungwangwa, 2017). Every society in all ages has a way of preparing its young ones for the future and its duties and responsibilities that goes with the adult world. In today's world the school is the institution that has been entrusted with this noble responsibility. A learner is placed in the hands of the school when he /she is as young as 4 years old and released in some cases, 20 years later. It is therefore cardinal that the institution, on whose shoulders is placed such an important responsibility, should be appealing and friendly to the learner. Short of this arrangement may result in the function of this institution to be futile.

1.3. Significance of the Study

Deficiencies in the school system do affect teaching and learning performance, student and staff health and safety. Presence of qualified teachers, employing the latest methodologies may not make a great impact if the teaching is being done in a dirty environment and dilapidated buildings and inadequate services. This study, therefore, would be significant at four levels, namely to the pupils, to the administration of the school, to the policy makers, and to donor agencies. To the pupils a clean and safe environment, with adequate facilities, is conducive for learning, and would have positive impact on performance. To the administration they would be running a motivated staff that is ready to put in their best. To the policy makers the principle of “A stitch in time serves nine,” would come into play. Money, human resources, and time would be served by identifying a problem in time and attending to it, then waiting until it collapses then spend huge sums of money to maintain it. Finally, the donors would be interested in injecting money in a project in which the recipients have sustainability programs in place.

2. Research methodology

2.1. Study Design

This study adopted a mixed method approach where quantitative and qualitative data was collected. The use of two methodologies was found to enhance research findings by providing a well-rounded understanding of the phenomenon under study. The mixed methods approach allowed the study to not only ensure the validity of the findings but also collect rich information from different perspectives. This mixed methods approach was used because it enabled the study to collect both quantified and personal verbatim which was of good help in furthering understanding of responses from the intended respondents.

2.2. Research Site

This study was conducted in Chibombo district in Zambia from the selected for the study were schools; A, B, C, D, E, F and G.

2.3. Population, Sample and Sampling Procedure

The target population for this study were officials from DEBS office, Head teachers, PMS coordinators, teachers and pupils giving a total of one thousand two hundred and eighty (1280). The sample size involved a total of 128 respondents which included 2 officials from DEBS office, seven (7) head teachers, one (1) from each selected school. Seven (7) PMS Chairpersons, one (1) from each selected school. Fourteen (14) primary teachers, two (2) from each selected school, and ninety-eight (98) pupils, fourteen (14) from each selected school. The study used both purposive and simple random sampling on different participants.

2.4. Data Analysis

Data analysis refers to the examining of what has been collected in a survey or experiment and making deductions and inferences. Data analysis also involves scrutinizing the acquired information and making inferences. For the purpose of analysis in this research, the collected responses from the questionnaires and interviews were arranged thematically and coded accordingly using a coding scheme. The coding scheme helped to create codes and scales from the responses, which were then summarized and analyzed using a relevant statistical software package. Preferably the researcher made use of the statistical package for social sciences (SPSSv16) as well as through Microsoft excels.

2.5. Ethical Issues

Permission from the District Education Board for Chibombo district was sought in carrying this study. Informed consent was sought from the respondents before collecting information from them and guaranteed them with security of the information they provided. Furthermore, the main objective of gathering such information was made clear to the respondents. The study avoided pressuring respondents to take part in the research. In this research, the study was fully conscious of the need to abide by the ethical rule of respecting the privacy of individuals taking part in the research. In the same way, all the respondents of the research were to remain unidentified to the public as all their valuable views, opinions, and perceptions were only known by the researchers for use only in the research, and participant's identities will forever remain hidden.

3. Findings and discussions

The following findings and discussions were presented according to set research objectives:

3.1. Activities Done During Preventive Maintenance System (PMS.)

Implementing a preventive maintenance system in primary schools is crucial for ensuring the smooth functioning of facilities and equipment, thereby creating a conducive learning environment. One of the primary reasons for its importance lies in cost savings (Macks, 2016). Regular maintenance helps identify and address minor issues before they escalate into major problems, reducing the need for expensive repairs or replacements. Moreover, a well-established preventive maintenance system enhances the safety of students, teachers, and staff. Regular inspections and upkeep of infrastructure such as electrical systems, playground equipment, and building structures help mitigate potential hazards, ensuring a secure environment for everyone within the school premises. This, in turn, promotes a sense of well-being and confidence among the school community.

Consistent maintenance also extends the lifespan of equipment and facilities, optimizing the return on investment. This is in agreement with Lundberg (2019) who says that by addressing wear and tear promptly, schools can avoid premature deterioration of assets, allowing them to serve the educational community effectively for an extended period. This approach aligns with principles of fiscal responsibility and sustainability, contributing to the efficient utilization of resources. In addition to tangible benefits, a preventive maintenance system positively impacts the overall operational efficiency of the school. Regularly serviced equipment and facilities are less likely to experience unexpected breakdowns, reducing disruptions to daily activities (Kowalski, 2020). This leads to a more streamlined educational process, with fewer interruptions in teaching and learning activities. Furthermore, implementing preventive maintenance fosters a culture of responsibility and accountability among school staff. Assigned maintenance tasks and schedules create a systematic approach to facility management, encouraging staff members to take ownership of their respective roles in maintaining a safe and functional learning environment.

According to the findings from the 64 respondents, the study interviewed the respondents and these were the results; 96 (75%) said that the activities which was in place was general cleaning one day per week, the other 32 (25%) respondents when asked by the researchers said that lubrication, replacing or repairing parts, or even partial or complete overhauls. More obvious examples of preventive maintenance include ensuring production line equipment is working efficiently or heating, ventilation or air conditioning elements are inspected, cleaned and updated. This was shown in Figure 1 below.

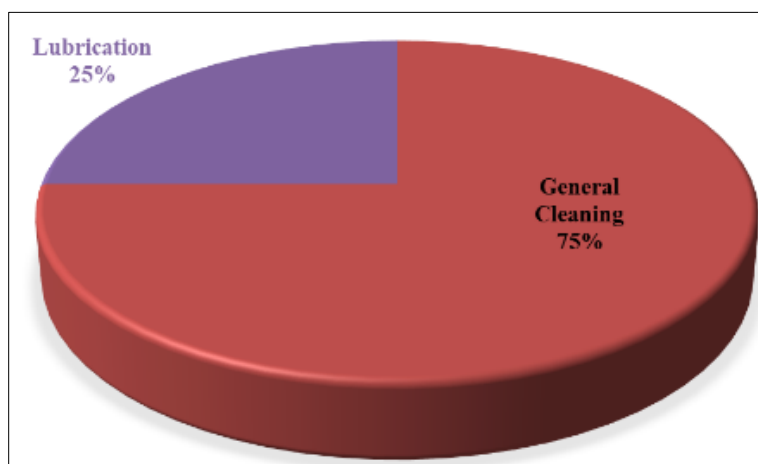


Figure 1 Activities Done During Preventive Maintenance System Programs

3.1.1. How does Preventive Maintenance System (PMS) help in Improving Quality Assurance Schools?

The study sought to ascertain how PMS help in improving quality assurance in schools. The respondents said that planned maintenance prevents expensive accidents and provides for timely and needed updates to the school's infrastructure. It cuts down on overall expenses by reducing or eliminating the need for many last-minute or emergency repairs. The implementation of a Preventive Maintenance System (PMS) plays a crucial role in enhancing Quality Assurance in schools by ensuring the optimal functioning of physical infrastructure and educational facilities (Keller, 2023). PMS involves a proactive approach to maintenance, focusing on scheduled inspections, routine repairs, and

timely replacements of equipment and facilities. By consistently monitoring and addressing potential issues before they escalate, schools can create a conducive learning environment that is safe, efficient, and reliable. This directly contributes to the overall quality of education by minimizing disruptions due to unexpected breakdowns, promoting a positive and conducive atmosphere for learning. Additionally, a well-maintained school environment reflects an institution's commitment to providing a high standard of education, instilling confidence in students, parents, and faculty alike. Through systematic preventive maintenance, schools can not only extend the lifespan of assets but also demonstrate a dedication to excellence, thus enhancing the overall quality assurance framework.

Ifeoma (2016b) points out that implementing a Preventive Maintenance System (PMS) in educational institutions, particularly schools, plays a crucial role in enhancing Quality Assurance (QA) standards. A PMS ensures that regular and systematic inspections, servicing, and repairs are conducted on the school's facilities, infrastructure, and equipment. By proactively addressing potential issues before they escalate, a PMS helps in maintaining a safe and conducive learning environment. This directly contributes to the overall quality of education by minimizing disruptions caused by unexpected breakdowns and ensuring that essential resources are always in optimal condition. Moreover, a well-executed PMS enhances the longevity of school assets, reducing the need for frequent replacements and avoiding costly emergency repairs (Howard, 2020). This cost-effectiveness allows schools to allocate resources more efficiently, directing funds towards educational programs and activities. Additionally, a PMS fosters a culture of responsibility and accountability among staff, as they become actively involved in the maintenance processes. This collective effort towards maintaining the school's infrastructure promotes a sense of pride and ownership, contributing to an overall positive atmosphere that supports quality education. Furthermore, a PMS aids in compliance with regulatory standards and safety guidelines, which are integral components of quality assurance in educational institutions. Regular inspections and maintenance help schools adhere to safety protocols, ensuring the well-being of students, teachers, and staff. By systematically addressing potential hazards, a PMS aligns the school with established quality benchmarks, fostering a reputation for reliability and commitment to safety.

Moreover, a PMS contributes to the longevity of equipment and infrastructure, reducing the need for costly emergency repairs or replacements. This, in turn, ensures that educational resources are utilized efficiently and funds can be directed towards enhancing the overall quality of education (Hoffman, 2023). A proactive maintenance approach also minimizes disruptions to the academic calendar, as unexpected breakdowns can lead to unplanned closures or disturbances in daily activities. In addition to physical infrastructure, a PMS can extend to the maintenance of digital systems, such as computer labs and educational technology tools. Regular updates, software maintenance, and troubleshooting of technical issues contribute to a seamless integration of technology in the learning process (Hamid et al, 2023). This, in turn, supports the school's commitment to providing a modern and effective education environment. Overall, a Preventive Maintenance System is an integral component of a school's Quality Assurance strategy, as it ensures that the physical and technological aspects of the educational infrastructure are well-maintained, promoting a safe, efficient, and conducive environment for both students and educators.

Table 1 Preventive maintenance

Preventive maintenance	Frequency	Percent (%)
Lengthened lifespan of assets	13	10%
Lowering Emergency Maintenance Work Orders	17	13%
Less equipment downtime	9	7%
Increased workplace safety and improved compliance	20	15%
Makes learning effective	15	12%
Improved efficiency (assets in good repair tend to operate better)	55	43%
Total	128	100.0

3.2. Challenges Experienced by the Administrators in the Execution of Preventive Maintenance System (PMS.)

The figure 2 below shows the responses given by the respondents on the challenges administrators experience in identifying and implementing PMS programs in Chibombo district. 15% stated that administrators lack information in identifying preventive maintenance system programs. 20% when asked they also gave their answers based on what they have seeing for years, and they said that discontinuity is the biggest challenge administrators experience, many projects here in schools are abandoned, reasons we don't know. The other (40%) respondents which were the majority

stated poor funding while 15% stated that ignoring the principles challenged the implementations and the last group of respondents (10%) mentioned stress on facilities. From the findings, the study found that administrators face several challenges in the execution of preventive maintenance systems, hindering the seamless implementation of these crucial strategies. Firstly, financial constraints pose a significant hurdle. This finding is in line with Ifeoma (2016b) who says that allocating sufficient funds for regular maintenance can be challenging, especially when organizations are under pressure to cut costs. This limitation often results in delayed or deferred maintenance activities, increasing the risk of equipment failure. Secondly, there is the issue of resource allocation and scheduling. Coordinating preventive maintenance tasks with ongoing operations is a delicate balancing act. Administrators must carefully plan and schedule maintenance activities to minimize disruptions to regular workflows. The challenge lies in finding optimal time slots that do not interfere with production or service delivery, yet allow for thorough maintenance checks.

Another challenge is the availability of skilled personnel. Preventive maintenance often requires specialized knowledge and expertise. Jones et al (2014) observes that administrators may struggle to find qualified technicians who can efficiently carry out inspections and repairs. Training existing staff or recruiting skilled professionals becomes crucial but can be time-consuming and resource-intensive. Technological challenges also play a role in hindering preventive maintenance execution. Outdated or incompatible systems may not support advanced monitoring and diagnostic tools, limiting the effectiveness of maintenance efforts. Administrators need to invest in modern technology and ensure compatibility with existing infrastructure, adding complexity to the implementation process. Additionally, Lijimu (2016) says that communication and documentation pose additional challenges. Establishing clear communication channels among maintenance teams, departments, and management is essential for effective preventive maintenance. Inadequate documentation of maintenance activities and data can lead to inefficiencies, making it difficult to track and analyze the performance of the preventive maintenance system over time. Lastly, resistance to change within the organizational culture can impede the successful execution of preventive maintenance. Employees may be accustomed to reactive maintenance practices, and convincing them of the benefits of a proactive approach requires effective communication and change management strategies.

Additionally, the findings also indicated that the execution of a preventive maintenance system is crucial for ensuring the longevity and optimal functioning of equipment and facilities. However, administrators often face various challenges in implementing and maintaining such systems. One significant challenge is the allocation of resources, both in terms of finances and manpower. Establishing and sustaining a robust preventive maintenance program requires a substantial investment, and administrators often grapple with the need to balance these expenditures against other operational priorities (MoE, 2018). Another obstacle is the development of an effective scheduling system. Administrators must create a comprehensive schedule that minimizes disruptions to regular operations while ensuring that maintenance activities are performed at the appropriate intervals. This task becomes more complex when dealing with a diverse range of equipment, each with its unique maintenance requirements. Furthermore, keeping up with technological advancements poses a challenge. As equipment evolves, administrators need to stay abreast of the latest maintenance techniques and technologies to optimize the preventive maintenance system. This necessitates ongoing training for maintenance staff and may require additional investment in new tools or software (UNESCO, 2015). Communication barriers can also impede the smooth execution of preventive maintenance. Coordination between different departments, as well as clear communication with maintenance personnel, is essential. Muzir (2017) narrates that miscommunication can lead to missed maintenance tasks or the inefficient use of resources. Additionally, obtaining buy-in from all stakeholders within an organization can be challenging. Some employees may not recognize the long-term benefits of preventive maintenance and may resist changes to established routines. Overcoming resistance and fostering a culture that values proactive maintenance is crucial for the success of the preventive maintenance system.

The findings further showed that another significant challenge is the identification and prioritization of critical assets requiring preventive maintenance. Administrators must establish a robust system for asset tracking and condition monitoring, ensuring that the most crucial equipment receives timely attention (Ndlapo, 2015). The lack of accurate data on asset health and performance can lead to inefficiencies and missed opportunities for preventative interventions. Inconsistent compliance with maintenance schedules and procedures poses a persistent challenge. Administrators often encounter resistance from operational teams who may perceive scheduled maintenance as disruptive to regular workflow. This resistance can result in deviations from established maintenance plans, reducing the system's effectiveness and compromising the overall reliability of equipment. Furthermore, technological limitations and outdated infrastructure can impede the successful execution of preventive maintenance systems. Administrators may face difficulties in implementing advanced monitoring and diagnostic tools, leading to a reliance on manual inspection methods (NRG, 2014). This not only increases the likelihood of oversight but also hampers the efficiency gains that modern technology could provide.

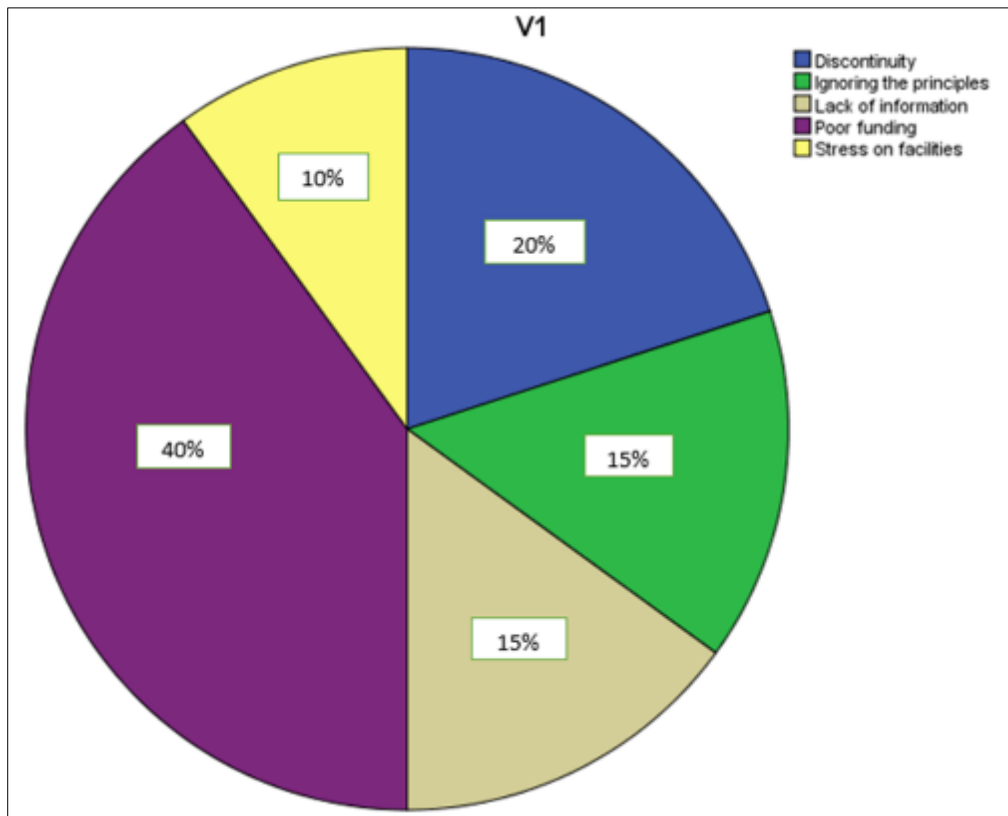


Figure 2 Challenges Experienced by the Administrators in the Execution of Preventive Maintenance System (PMS.)

4. Conclusion

In conclusion, implementing a Preventive Maintenance System in primary schools is paramount for ensuring the optimal functioning and longevity of educational facilities. By proactively addressing potential issues and conducting regular inspections, schools can mitigate the risk of equipment failure, minimize disruptions to the learning environment, and ultimately enhance the overall safety and well-being of students and staff. The systematic and planned approach of preventive maintenance not only saves costs in the long run by avoiding major repairs but also contributes to the efficient allocation of resources. Moreover, a well-maintained school environment fosters a positive atmosphere conducive to effective teaching and learning. Therefore, investing in a robust Preventive Maintenance System is a strategic decision that not only safeguards the physical infrastructure of primary schools but also nurtures a conducive educational ecosystem for the holistic development of students.

Recommendations

The following are actions that should be taken on the basis of the findings of this study:

- There is need for greater emphasis to be placed on character formation in the Ministry of Education as is specified in the Zambian document, Education for All. Such formation should not restrict itself to respect for humans only but also respect for the environment.
- There is an urgent need for the teaching of environmental ethics in teacher training colleges, not just for an appreciation of the overall environment, but in a more particular sense of highlighting the need for greater respect and appreciation of material things and manual work in the context of school property and surroundings.
- Schools need to have their own clearly defined and circulated policy guidelines to highlight the features of the PMS policy and to explain their importance.
- Technocrats should design a Preventive maintenance document that should state when periodic maintenance activities should be conducted and financing should factor this component.
- Political administrations should consider continuity of policy implementation above party manifestos.

Compliance with ethical standards

Disclosure of conflict of interest



No conflict of interest to be disclosed.

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Authors Short Biography

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