APPRAISAL OF FACTORS MILITATING AGAINST THE EFFECTIVE IMPLEMENTATION OF GENERAL MAINTENANCE PRACTICE AND SAFETY MEASURES IN ADAMAWA STATE SECONDARY SCHOOLS AND TECHNICAL COLLEGES

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ABSTRACT
The purpose of this study is to Appraised the Factors militating Against the Effective Implementation of General Maintenance practice and Safety Measures in Adamawa State secondary schools and technical colleges. The study was guided by stwo research questions and two null hypotheses were formulated and tested at 0.05 level of significance. The study adopted descriptive survey research design. The total population of the study was 265 people comprising 220 teachers and 45 school administrators in both secondary schools and technical colleges of Adamawa state. The instrument used for data collection was a structured questionnaire titled “Appraisal of Factor Affecting General Maintenance Practices and Safety Measures Secondary Schools and Technical Colleges (AFAGMPSMSSTCAS) which had five-points rating scale. The instrument was validated by three experts. The reliability coefficient of the instruments was found to be 0.76 using Cronbach Alpha method. The researcher, with the help of three research assistants administered the instrument. The data were analyze using Microsoft Excel. Mean and standard deviation were used to answer the research questions, while z-test was used to test the null hypotheses at 0.05 level of significance. The findings of the study among others revealed that, factors such as: adequate provision for first aid box equipment, safety equipment are lacking, instructions for machine operations are factors militates against the effective implementation of general safety measures in secondary schools and technical colleges of Adamawa state. Recommendations were made which include among others that Government should provide policies that will change the poor state of maintenance practice in the schools and colleges. School and college administrators should promote different safety measures through check or supervision schedule in order to appraise the general safety measures presently found in their school.

KEYWORDS: Appraisal, Maintenance, Safety and Measures.

INTRODUCTION
Secondary Schools and Technical Colleges are those levels of education after primary education. Secondary schools prepare the students for general various labour markets while technical colleges are mainly established for the training of students to acquire practical skills, knowledge and attitude. However, the major goals of technical colleges are to produce efficient and relevant craftsmen that will promote industrial development in the area of maintenance, production of goods and general
services, technical colleges are principal vocational institutions in Nigeria that give full vocational training intended to prepare students for entry into various occupations.

Maintenance is an issue of great concern to whoever has the responsibility for providing funds for procurement or provision of capital assets both at public and private sectors, especially with the present state of the nation’s economy (Olaitan & Onyemachi, 2000). British Standard Institute (2004) defined maintenance as combination of factors undertaken to retain or restore an item to an acceptable condition. Also, Omolo & Simatwa (2010) defined maintenance as the care given to equipment, tools, building and other facilities so that they would be operating in good working condition. Stressing the importance of maintenance, Shohet & Straus (2013) viewed maintenance as the good working condition, which may extend the life span of facilities and equipment.

Safety strategies according to Bako (2000), is the art of planning for a safety conscious workshop environment conducive for teaching, learning, and research. Safety in the laboratory is the art of inculcating the necessity of taken precaution for the avoidance or reduction of an accident to protect people and property (physical assets). Workshop safety awareness is the concern of all because of the complex and expensive equipment involved Arayela and Adams (2001). It is, therefore, the prerogative of the workshop administration to ensure the long-life span of the workshop and its equipment so that government will continue to participate and invest in the workshop for intrinsic values for the educational goals. Dekker (2003) opined that safety observance in the workshop and patterns of behavior demonstrated by students in the use of workshop safety measures. School safety plans should be reviewed and revised regularly. Schools and districts should also conduct drills and exercises to familiarize everyone with the plan. In safety situations, people rely on instinct and training. If everyone is familiar with safety plans and procedures, response is streamlined and more effective. Response is the process of implementing appropriate actions while the safety situation is unfolding, in this phase schools and districts mobilize resources and implement safety procedures necessary to handle the safety.

Maintenance practice can be promoted through the effective techniques for school management. The involvement of staff in planning, directing and controlling facilities for learning skills in various occupations and in meeting with institution work objective is significant. The equipment for acquiring skill requires maintenance. Other things such as consumables material is to be securely handled and appropriately stored (Mbamali, 2004).

Every day, from inclement weather to hazardous spills, schools across the country face a variety of potential crises. While Minnesota schools are particularly familiar with the many natural hazards posed by severe weather, our schools also face additional risks of school violence, infectious disease and terrorist attacks. As schools continue to plan and prepare for critical events, implementing a safe school assessment process is an important step to help schools understand their strengths, risks and areas of weakness.
Michael (2000) added that a well-conceived and implemented maintenance practice is reinforcing activities that ensure continuity within the production system. To ensure that the maintenance practice is consistent in our school management should comply with the following:

i. Ensure that regular maintenance activities are carried out in the school.
ii. Organize a work-study training program for teachers to improve their problem-solving ability and skills.
iii. Provide adequate funds for maintenance purposes in the school.
iv. Ensure proper supervision of the activities of the workers in the school. Organize seminar and workshops on maintenance issues in the institution.

Akuezilo and Agu (2003) opined that it is a desirable technique to make institutions workshop similar to occupational standards and actual industrial setting and condition. This will prepare the learner for various occupations and minimize the adjustment needed to enter into industrial or world of work.

According to Enemali (2004), safety observances are categorized into two, habits, equipment and material:

i. Horse play-running or playing practical jokes which lead to dangerous jokes.
ii. Refusal to wear protective clothing and shoes; refusal to clean the workshop and returning the tools to their appropriate tools cabinet after workshop practice.
iii. Showing unwillingness to wipe up oil deposited on the floor of the workshop.
iv. Neglecting fire regulation and to operate extinguisher during hazard in the workshop. Operating machine without permission and guideline.
v. Showing unwillingness to keep long hair out of the eye and moving machine parts.
vi. Playing no attention to specific rules and regulation.
vii. Failure to store material, part of the job and completed project safely in their store area.
viii. Welding with goggle and machine guide.

Napoleon (2004) stated that since safety involves human behaviour, it, therefore, requires good knowledge for successful workshop practice. The techniques assist the teachers or instructors in the safety use of equipment. The techniques further help the teachers to adopt proper maintenance service. The techniques include:

i. Avoid horse-play in the workshop
ii. Wearing proper work clothes and shoes or feet protectors
iii. Decongesting the workshop
iv. Returning and signing off tool to the store officer at the end of work
v. Working on slippery and wet floor
vi. Keeping functional first aid box and firefighting equipment in a strategic location.
vii. Keeping waste disposal facilities out of the workshop
viii. Wearing mask for job that require
ix. Maintaining electrical safety rule
x. Switching off the machine before and after adjustment and use of machines

Reporting any damage to the workshop supervisor no matter how to mirror it is evident that there is probably no other problem which is of more increasing concern everywhere, be it at home on a highway, industry at an institution of final analysis (Napoleon, 2004).

School safety measures plan requires a cooperative effort. Procedures in the maintenance and safety are general guidelines based on local, state and national best practices. School administrators are encouraged to review these procedures in coordination with national policies and safety plans. Dilima (2003) stated that procedures should be customized to fit specific school building sites and coincide with local safety measures response procedures. Providing a safe, thriving environment for students to learn and staff to work is the foremost goal of any school setting. Creating a safe environment that facilitates learning can be a challenging task. School administrators and safety measures managers must work together to create healthy school climates, effective intervention and crisis plans that prepare staff and students for safety measures.

In recent years, natural disasters such as floods, fires and tornadoes have impacted daily school operations. Nigerian schools have also been affected by rare, but tragic acts of violence including; schools’ buildings, animals attack and assaults of all kinds from different sources Dilima (2003). These events have reinforced the need for Nigeria schools to prepare for potential crises and facilitate safe and healthy learning environments for all students and staff a school safety measure planning directs staff and student preparation and response. Knowing how to respond during a crisis helps everyone remain calm, understand their role, and act as safely and efficiently as possible. Safety measures planning must include all risks, crises, and safety measures schools may encounter (Nwanchukwu, 2000).

Developing and maintaining a safe school environment is the responsibility of the entire school community, including families. Families trust schools to keep their children safe during the day and expect school staff to be properly equipped to handle safety measures. Working 'with teachers, principals and staff parents/guardians can provide resources and assistance to support school safety measures preparedness. Successful preparations and response lead to a more resilient recovery and restoration of the school’s learning environment. Careful planning, practice, and effective response, save lives, prevent injuries and minimize property damage. Exercising, reviewing and revising both school and district safety measures plans is crucial to keeping plans current and aligned with best practices (Nwanchukwu, 2000). The goal of the Proper safety measures is to assist schools in the planning process and provide practical guidance.
Statement of problem
Despite Federal Government placing great importance on school fund yet, there is a poor maintenance and safety practice in state secondary schools and technical colleges of Adamawa State. The researchers experience over time as teaching practice supervisor has shown that both the administrators and teachers of these schools have not adequately incorporated maintenance practice and safety measures. Also Ogonor and Asiyai (2012) observed that teachers and school administrators over-look the importance and need for maintenance practice and safety measures. Although the Adamawa State Government has made very significant contributions towards public schools’ construction, furnishing and management in recent years through the Ministry of Education, but valuable facilities have been damaged and many properties have been lost in school; ranging from collapsed, building, faulty machines and equipment among other. This is perhaps due to poor maintenance practice and safety measures. This has led to physical decay in the schools’ facilities, leaking roofs, peeling and cracked walls among others. This situation makes the schools environment unsafe for teaching and learning. Lives and properties will continue to be lost. If the situation is left unattended. These problems among others have compelled the researcher to ask question what is the general maintenance and safety measures in Adamawa State secondary schools and technical colleges?

Purpose of the study
1. Factors militating against the effective implementation of general maintenance practice in Adamawa State secondary schools and technical colleges,
2. Factors militating against the effective implementation of safety measures in Adamawa

Research Question
1. What are the factors militating against the effective implementation of general maintenance practice inAdamawa State secondary schools and technical colleges?
2. What are factors militating against the effective implementation of safety measures in Adamawa State secondary schools and technical colleges?

Hypotheses
H01: There is no significant difference between the mean responses of teachers and school administrators on the major factors militating against the effective implementation of general maintenance practice in secondary schools and technical colleges in Adamawa State
H02: There is no significant difference between the mean responses of teachers and school administrators on the major factors militating against the effective implementation of general safety measures in secondary schools and technical colleges in Adamawa State.

Methodology
This chapter describes the methodology of the study. The chapter discusses the design of the study, the area of the study, the population of the study, sample and sampling techniques. Others are
instrument for data collection, validation of the instrument, reliability of the instrument, method of
data collection and method of data analysis.

3.1 Research Design
This study adopted descriptive survey research design. According to Peil (2005), survey research
gathers data at a particular point in time with the intention of describing the nature of the condition.
Survey research design is appropriate for this study because it gathered information through the use of
questionnaire which was used to describe the perception of the respondents on general maintenance
practice and safety measures in state secondary schools and technical colleges of Adamawa State.

3.2 Area of the Study
The geographical area of the study was Adamawa State of Nigeria. It is located in the North Eastern
part of Nigeria. Adamawa State has a total area of 39, 742, 12 Km2. (Adebayo&Tukur, 1999). It shares
boundary with the Cameroon Republic, Borno State in the East-West, Gombe State in East-West, and
Taraba state in the South West.

3.3 Population of the Study
The population for this study was 265 people, comprising 220 Teachers and 45 School Administrators
as the target population, in all selected Secondary Schools and Technical Colleges of Adamawa State.
(See appendix III for population distribution in the study).

3.4 Sample and sampling Techniques
The population for this study was manageable. Therefore, there were no sampling and sampling
techniques in this study. The entire population was used as sample in the study.

3.5 Instrument for Data Collection
The instrument for data collection was structured questionnaire tagged “Appraisal of General
Maintenance Practices and Safety Measures Secondary Schools and Technical Colleges
(AGMPSMSSTCAS). It was developed by the researcher. The instrument was divided into two
Sections; A and B. Section A sought information on personal data of the respondent. While section B
was divided into five sections, B1, B2, B3, B4 and B5. Each section has questionnaire items that
elicited responses towards answering the research questions. The questionnaire items had five rated
response options. Each response option was assigned a numerical value as follows: Strongly Agreed
(SA) 5, point: Agreed (A) 4, point: Moderately (MA) 3, point: Disagreed (DA) 2, point and strongly
Disagreed (SD) 1, point.

3.6 Validation of the Instrument
The instrument was face and content validated by three experts from Technology Education
Department, Modibbo Adama University of Technology, Yola. The Validate were requested to assess
questionnaire items for appropriateness and the language, among other things, used in the
questionnaire. The suggestions and corrections made by the Validate were used to produce the final copy of the instrument. (See appendix VII).

3.7 Reliability of the Instrument
The reliability of the instrument was determined using a split-half method. The instrument was trial tested on 20 teachers and 5 school administrators in Government secondary school and Technical College in Taraba state which was not part of the study area. Pearson Product moment Coefficient was used to correlate the result of the two split halves. Cronbach Alpha method was used and the reliability co-efficient of 0.76 was obtained.

1.8 Method of Data Collection
Data for the study was collected by the researcher through direct administration of the questionnaire with the help of three research assistants selected from each of the schools visited. Effort has been made to retrieve the instrument within a period of three days to enhance rate of returns.

3.9 Method of Data Analysis
The data collected for this study was analysed using Microsoft Excel. Mean and standard deviation was used to answer the research questions, while Z-test was used to test the null hypotheses at 0.05 level of significance. Real limits of the assigned numerical values to the response options were used to determine the cut off points for interpreting and taking decision when answering the research questions. The limits of the numerical values of each of the response option are as shown in appendix IV. The mean of the assigned numerical values to the response options (5+4+3+2+1/5) is 3.00. Therefore, for this study the real limits of 3.00 is 2.50 - 3.49. The upper limit of 3 is 3.49. This limit was used for taking decision. The decision rule for answering the research questions was that, any item with a mean response of 3.49 and above was regarded as agreed and any mean response below 3.49 was regarded as disagreed. (See appendix IV). These limits were used in taking decision. Z- Test was used to test the hypotheses at 0.05 level of significance. Z-test is an appropriate choice for this study because according to (Uzoagulu, 2011), Z-test is appropriate for analysing data whose sample size is thirty and above (30) and a sample is considered large when a sample size is equal to or greater than 30. The present study used large sample of more than 30; therefore Z-test is appropriate for this study. The decision rule for testing the hypotheses was that, when z-calculated value was greater the null hypothesis was rejected and when z-calculated value was less than Z-critical value, the null hypothesis was accepted.

RESULT

4.1 Research question 1
What are the major factors militating against the effective implementation of general maintenance practice in Adamawa state secondary schools and technical colleges?
Table 1: Mean Rating and Standard Deviations of responses of Respondents on Major Factors Militating against the Effective Implementation of General Maintenance Practice in Adamawa State Secondary Schools and Technical Colleges?

<table>
<thead>
<tr>
<th>S/N</th>
<th>Items</th>
<th>n1=220, n2=45, NT=265</th>
<th>$\bar{x}_1$</th>
<th>$\bar{x}_2$</th>
<th>$\bar{x}_g$</th>
<th>$\sigma$</th>
<th>REMARK</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>Maintenance personnel are not available for maintenance of equipment in the schools laboratories.</td>
<td>3.41</td>
<td>2.98</td>
<td>3.35</td>
<td>0.44</td>
<td>Disagreed</td>
<td></td>
</tr>
<tr>
<td>26</td>
<td>Insufficient funds for maintenance purposes and purchase of necessary supplies in the school.</td>
<td>3.12</td>
<td>3.11</td>
<td>3.13</td>
<td>0.32</td>
<td>Disagreed</td>
<td></td>
</tr>
<tr>
<td>27</td>
<td>Workshops are not organized for staff on general maintenance practices in the school.</td>
<td>3.20</td>
<td>3.44</td>
<td>3.26</td>
<td>0.36</td>
<td>Disagreed</td>
<td></td>
</tr>
<tr>
<td>28</td>
<td>Insufficient equipment for carrying out maintenance work in the school.</td>
<td>3.82</td>
<td>3.42</td>
<td>3.76</td>
<td>0.50</td>
<td>Agreed</td>
<td></td>
</tr>
<tr>
<td>29</td>
<td>Machine and equipment are not regularly maintained in school workshops/laboratories.</td>
<td>3.57</td>
<td>3.04</td>
<td>3.49</td>
<td>0.40</td>
<td>Disagreed</td>
<td></td>
</tr>
<tr>
<td>30</td>
<td>There is high morale due to adequate incentive for maintenance personnel in the school.</td>
<td>3.11</td>
<td>3.27</td>
<td>3.15</td>
<td>0.29</td>
<td>Disagreed</td>
<td></td>
</tr>
<tr>
<td>31</td>
<td>There is poor attitude towards maintenance practice by the teachers of the school.</td>
<td>3.57</td>
<td>3.20</td>
<td>3.52</td>
<td>0.45</td>
<td>Agreed</td>
<td></td>
</tr>
<tr>
<td>32</td>
<td>Unavailability of spare parts for maintenance of the machine in the schools workshops.</td>
<td>3.57</td>
<td>3.38</td>
<td>3.55</td>
<td>0.42</td>
<td>Agreed</td>
<td></td>
</tr>
<tr>
<td>33</td>
<td>There is proper orientation of students on the need to take maintenance issues with all the seriousness it deserves in the school.</td>
<td>3.48</td>
<td>2.96</td>
<td>3.40</td>
<td>0.41</td>
<td>Disagreed</td>
<td></td>
</tr>
<tr>
<td>34</td>
<td>There is official maintenance policy document to regulate the conduct of the managers of the schools</td>
<td>2.96</td>
<td>3.00</td>
<td>2.98</td>
<td>0.34</td>
<td>Disagreed</td>
<td></td>
</tr>
</tbody>
</table>

Table showed the summary of the data collected for research question 3. The result showed that both the school administrators and teachers agreed on the three items, (28,31,32) as major factors militating against the effective implementation of general maintenance practice, while, disagreed on the remaining 7 items received mean responses ranging from 2.98 to 3.76. The standard deviation of below 1.00 for all responses from the individual groups of respondents indicates that the response was closely unanimous. The grand mean of the two groups shows a mean of 3.36. Based on the data presented and the subsequent analysis, the respondents showed agreement on the major factors militating against the
effective implementation of general maintenance practice in Adamawa state secondary schools and technical colleges. Some of those militating factors are; lack of maintenance personnel; lack of fund for maintenance and there is proper orientation of students on maintenance issues.

4.2 Research question 2

What are the major factors militating against the effective implementation of general safety measures in secondary schools and technical colleges in Adamawa state?

Table 2: Mean Rating and Standard Deviations of responses of Respondents on the Major Factors Militating against the Effective Implementation of General Safety Measures in Adamawa State Secondary Schools and Technical Colleges.

<table>
<thead>
<tr>
<th>S/N</th>
<th>Items</th>
<th>n1=220, n2=45, NT=265</th>
<th>$\bar{X}_1$</th>
<th>$\bar{X}_2$</th>
<th>$\bar{X}_6$</th>
<th>$\sigma$</th>
<th>REMARK</th>
</tr>
</thead>
<tbody>
<tr>
<td>35</td>
<td>There is sufficient guiding instructions on machine operation</td>
<td>3.09</td>
<td>2.98</td>
<td>3.08</td>
<td>0.32</td>
<td>Disagreed</td>
<td></td>
</tr>
<tr>
<td></td>
<td>in the workshops</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>36</td>
<td>There is adequate ventilations in classroom, and hostels.</td>
<td>2.44</td>
<td>3.11</td>
<td>2.57</td>
<td>0.18</td>
<td>Disagreed</td>
<td></td>
</tr>
<tr>
<td>37</td>
<td>There is adequate provision of firefighting equipment in the</td>
<td>3.36</td>
<td>3.49</td>
<td>3.39</td>
<td>0.35</td>
<td>Disagreed</td>
<td></td>
</tr>
<tr>
<td></td>
<td>schools’ workshops/laboratories</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>38</td>
<td>Safety goggles are not provided and those available are not in</td>
<td>3.52</td>
<td>3.02</td>
<td>3.45</td>
<td>0.41</td>
<td>Disagreed</td>
<td></td>
</tr>
<tr>
<td></td>
<td>good condition in the workshops.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>39</td>
<td>Improper provision and installation of gas cylinders in school</td>
<td>3.55</td>
<td>2.78</td>
<td>3.43</td>
<td>0.39</td>
<td>Disagreed</td>
<td></td>
</tr>
<tr>
<td></td>
<td>workshops/ laboratories</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>40</td>
<td>There is inappropriate equipment for carrying out safety works in</td>
<td>3.59</td>
<td>3.20</td>
<td>3.54</td>
<td>0.43</td>
<td>Agreed</td>
<td></td>
</tr>
<tr>
<td></td>
<td>school</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>41</td>
<td>There is inadequate provision of first aid equipment in the school.</td>
<td>3.68</td>
<td>3.02</td>
<td>3.58</td>
<td>0.44</td>
<td>Agreed</td>
<td></td>
</tr>
<tr>
<td>42</td>
<td>There is inadequate provision for natural and artificial light in the</td>
<td>3.59</td>
<td>3.18</td>
<td>3.53</td>
<td>0.43</td>
<td>Agreed</td>
<td></td>
</tr>
<tr>
<td></td>
<td>classroom and staffroom</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>43</td>
<td>The teachers do always outline safety precaution before each practical</td>
<td>3.14</td>
<td>2.87</td>
<td>3.10</td>
<td>0.31</td>
<td>Disagreed</td>
<td></td>
</tr>
<tr>
<td></td>
<td>lesson</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>44</td>
<td>Negligence to duty by the school authority causes hindrance to</td>
<td>3.37</td>
<td>3.20</td>
<td>3.35</td>
<td>0.36</td>
<td>Disagreed</td>
<td></td>
</tr>
<tr>
<td></td>
<td>effective implementation of maintenance.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>45</td>
<td>Careless attitude to work by the school administrators.</td>
<td>3.45</td>
<td>2.73</td>
<td>3.33</td>
<td>0.40</td>
<td>Disagreed</td>
<td></td>
</tr>
<tr>
<td>46</td>
<td>Improper supervision by the school administrators.</td>
<td>3.45</td>
<td>3.04</td>
<td>3.31</td>
<td>0.36</td>
<td>Disagreed</td>
<td></td>
</tr>
</tbody>
</table>
Table 2 showed that only three items (40, 41, and 42) were agreed by the respondent, however, the remaining 11 items out of 14 were disagreed by the respondents that those things were lacking. The standard deviation of two groups of the respondents showed close but different ranges with each having a standard deviation below 0.44 which indicated that responses were closely related to each other. The grand mean of the two groups stood at 3.31. This clearly showed that, respondents agreed that items such as: lack of appropriate equipment; no sufficient guiding instructions on machine operations; and no first aid box equipment’s are major factors militating against the effective implementation of safety measures in secondary schools and technical colleges in Adamawa state.

**Hypothesis 1**

There is no significant difference in the mean of responses of teachers and school administrators on the major factors militating against the effective implementation of general maintenance practice used in Adamawa state secondary schools and technical colleges.

**Table 3: z-Test Analysis of Difference between Opinion of Teachers and Administrators on General Maintenance Practice**

<table>
<thead>
<tr>
<th>Respondents</th>
<th>N</th>
<th>$\bar{x}$</th>
<th>$S^2$</th>
<th>z-cal</th>
<th>z-crit</th>
<th>Decision</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teachers</td>
<td>220</td>
<td>3.38</td>
<td>0.07</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Administrators</td>
<td>45</td>
<td>3.18</td>
<td>0.04</td>
<td>1.95</td>
<td>1.96</td>
<td>Accepted</td>
</tr>
</tbody>
</table>

Key: N=numbers of respondents, x mean, SD=standard deviation, z-calculated value z- critical value.

Table 3 revealed that z-cal is 1.95 and is less than the z-crit of 1.96 at 0.05 level of significance. Hence, the null hypothesis was accepted indicating that there is no significant difference between the mean
responses of teachers and school administrators on general maintenance practice used in Adamawa state secondary schools and technical colleges.

**Hypothesis 2**
There is significant difference between the mean of responses of teachers and administrators on the major factors militating against the effective implementation of general safety measures used in Adamawa state secondary schools and technical colleges.

**Table 4: z-Test Analysis of Difference between Opinion of Teachers and Administrators on General safety Measures**

<table>
<thead>
<tr>
<th>Respondents</th>
<th>N</th>
<th>$\bar{X}$</th>
<th>$S^2$</th>
<th>z-cal</th>
<th>z-critical</th>
<th>Decision</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teachers</td>
<td>220</td>
<td>3.34</td>
<td>0.10</td>
<td></td>
<td>2.24</td>
<td>1.96</td>
</tr>
<tr>
<td>Administrators</td>
<td>45</td>
<td>3.10</td>
<td>0.05</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Key: N=numbers of respondents, $\bar{X}$ mean, $S^2$ standard deviation, z-calculated value z-critical value.

Table 4 revealed the opinion of teachers and administrators on general safety measures was tested statistically with a z-test at 0.05 level of significance. The data on hypothesis 4 showed that z-cal is 2.24 and is greater than the z-crit of 1.96 at 0.05 level of significance. Therefore, the null hypothesis was rejected indicating that there is significant difference between the mean responses of teachers and school administrators on general safety measures used in Adamawa state secondary schools and technical colleges.

**Findings**
Based on the results obtained from the data analysed, the following findings were revealed that:

1. Factors such as: adequate provision for first aid box equipment, safety equipment are lacking, instructions for machine operations are factors militates against the effective implementation of general safety measures in secondary schools and technical colleges of Adamawa state.

2. The respondents agreed that items such as: lack of appropriate equipment; no sufficient guiding instructions on machine operations; and no first aid box equipment’s are major factors militating against the effective implementation of safety measures in secondary schools and technical colleges in Adamawa state.

3. There is no significant difference between the mean responses of teachers and school administrators on the major factors militating against the effective implementation of general maintenance practice in Adamawa state secondary schools and technical colleges.
There is significant difference between the mean responses of teachers and school administrators on the major factors militating against the effective implementation of generalsafety measures in Adamawa state secondary schools and technical colleges.

DISCUSSION OF FINDING
Research Question one revealed that, Facts such as: adequate provision for first aid box equipment, safety equipment are lacking, instructions for machine operations are factors militates against the effective implementation of general safety measures in secondary schools and technical colleges of Adamawa state. This finding is in consonance with findings of Ihuoma (2008) who found that most colleges lack basic facilities for effective implementation of general safety measures if there is need for effective facilities management in schools in Nigeria.

Findings from research question 2revealed that, in adequate provision of first aid box equipment in the schools and colleges. Appropriate safety equipment are lacking and no guiding instructions for machine operations this are some of the factors militates against the effective implementation of general safety measures in Adamawa state secondary schools and technical colleges. This finding is in consonance with findings of Ihuoma (2008) who found that most colleges lack basic facilities for effective implementation of general safety measures if there is need for effective facilities management in schools in Nigeria.

SUMMARY, CONCLUSION AND RECOMMENDATIONS
5.1 Summary
The purpose of the study was to appraise factors militating the implementation general maintenance and safety measures in secondary schools and technical colleges in Adamawa state. The population of this study was 265 respondents, comprising 220 teachers and 45 schools administrators. Two research questions were raised to guide the study and two null hypotheses was also formulated and tested at 0.05 level of significance. Five-point rating scale structured questionnaire was used for data collection. Mean and standard deviation were used to analyse to research questions with bench mark of 3.49 as index for agreeing with any of the questionnaire. The two null hypotheses were tested using z-test at 0.05 level of significance.

Findings in research question one revealed that, Factors such as: adequate provision for first aid box equipment, safety equipment are lacking, instructions for machine operations are factors militates against the effective implementation of general safety measures in secondary schools and technical colleges of Adamawa state.

The finding in research question two revealed lack of appropriate equipment; no sufficient guiding instructions on machine operations; and no first aid box equipment’s are major factors militating against the effective implementation of safety measures in secondary schools and technical colleges in Adamawa state.
5.3 Conclusion
Based on findings of the study, it is concluded that:
There are major factors militating against the effective implementation of general safety measures in secondary schools and technical colleges in Adamawa state such as no adequate provision for first aid box equipment in the schools and colleges.

5.4 Recommendations
Based on the findings of the study, the following recommendations were made:
1. The Ministry of Education and other relevant stakeholders should put measures in place to eliminate factors militating against maintenance and safety practices in Adamawa state secondary schools and technical colleges.
2. Secondary schools and technical college’s administrators should make use of the identified modern techniques in this study to overcome the factors militating against general safety measures in secondary schools and technical colleges

5.5 Suggestions for further Study
The scope of this study has given rise to the following suggestions for further studies;
2. Assessment of Factors militating Against the Effective Implementation of General Maintenance practice and Safety Measures in Kano State secondary schools and technical colleges

REFERENCE


