Relationship between School Facilities Administration and Maintenance Efficiency and Academic Performance of Senior Secondary School Students in Adamawa State, Nigeria

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Introduction- In spite of efforts by government to improve Nigerian system of education different kinds of problems ranging from mismanagement of resources to declining in standard of education are being experienced (Olaniyan & Anthony, 2013). This according to Amuche, Amuche, Bello and Marwan (2014) result in poor performance of students in external examinations such as the Senior School Certificate Examinations (SSCE) organized by West African Examination Council (WAEC).

Public outcries about the dilapidated nature and poor maintenance of available school facilities have yielded little or no result in Nigeria. This is because school administrators seem not to show much effort in tackling the problems as evidenced by poor handling of the facilities (Danjuma & Adeleye, 2015). This is why a casual visit to any public secondary school in Nigeria (Abah, 2016) reveals the extent to which school facilities have decayed.

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I. INTRODUCTION

In spite of efforts by government to improve Nigerian system of education different kinds of problems ranging from mismanagement of resources to declining in standard of education are being experienced (Olaniyan & Anthony, 2013). This according to Amuche, Amuche, Bello and Marwan (2014) result in poor performance of students in external examinations such as the Senior School Certificate Examinations (SSCE) organized by West African Examination Council (WAEC).

Public outcries about the dilapidated nature and poor maintenance of available school facilities have yielded little or no result in Nigeria. This is because school administrators seem not to show much effort in tackling the problems as evidenced by poor handling of the facilities (Danjuma & Adeleye, 2015). This is why a casual visit to any public secondary school in Nigeria (Abah, 2016) reveals the extent to which school facilities have decayed.

Waweru and Orodho (2013); Jackline and John (2014), examined relationship between management of school facilities and students’ academic performance. The results reveal rather good relationship. However, what is clear is that management of school facilities in secondary schools involves the application of management principles in planning, allocating, designing, controlling and effective maintenance towards achievement of educational goals (Latika, 2009). This effectiveness according to United Nations Educational, Scientific and Cultural Organization (UNESCO, 2006) is judged by the extent to which schools generally meet the expectations of the society within which they are established. These expectations are better seen in students’ academic performance.

Mbaya, Audu and Aliyu (2014) defined school facilities administrative efficiency as the judicious utilization of resources, proper conduct and management of educational affairs to facilitate academic effectiveness. Thus, it is the responsibility of school administrators to ensure that all components of the school facilities are in good working condition, well protected and used for the purpose(s) for which they were acquired. Xaba (2012) made the point that school facilities maintenance efficiency is concerned with ensuring safe conditions for facility users (learners, educators, staff, parents or guests), and creating a physical setting that is appropriate and adequate for learning. Academic performance was described by Adeyemi and Bolarinwa (2013) as scholastic standing of a student at a given moment explained in terms of grades obtained in a course or group of courses taken. It is also the level of students’ attainment in an external examination measured in terms of credit passes.

Adamawa State comprises five education zones (Mubi, Gombi, Numan, Ganye and Yola). The academic performance of Senior Secondary School students in SSCE in Adamawa State compared to other States in Nigeria have been very poor during the years under review (2013 – 2015) (Collins, 2015; Abah, 2016). The poor performance has made it difficult for majority of students to gain admissions into higher institutions of learning in recent times. Thus, principals’ administrative and maintenance inefficiency can be hypothesized to be responsible for this poor students’ academic performance in Adamawa State (Udonsa & Udonsa, 2015).

Despite the views of different writers, Saad (2014), Udonsa and Udonsa (2015), Abubakar (2016) and Aworanti (2016), maintained that most secondary schools in Adamawa State are generally ill-equipped for instruction; lack good seats and desks for students to write and are overcrowded. The standard for learning space such as availability of teachers’ seats and staff rooms, classroom windows and doors are not maintained. Teachers and students are exposed to danger in hot and cold weather. If the main instrument of evaluating the quality of secondary schools is students’ performance in West African Senior School Certificate Examinations; then factors affecting students’ academic performance with particular reference to school facilities administrative and maintenance efficiency should be of great concern. From these observations, it could be...
assumed that basic facilities that could facilitate learning are not adequately managed in Adamawa State and where they are available their conditions are not satisfactory for learning due to poor administrative and maintenance in efficiencies. It is on this premise that this research investigated the relationship between school facilities administrative and maintenance efficiency and academic performance of senior secondary school students in Adamawa State, Nigeria.

II. Statement of the Problem

Management of school facilities has been examined by educationists (Badau, 2010; Danjuma & Adeleye, 2015; Neji & Nuoha, 2015) in the different States of Nigeria and concluded that school principals have not been able to control and maintain educational facilities even where there is evidence of funding by the government. In the same vein, senior secondary schools in Adamawa State face the combined challenges of deteriorating conditions due to poor administrative and maintenance inefficiencies of educational resources (Abubakar, 2016). These combined deficiencies impair the quality of teaching and learning in these schools and create problems for students. The effects of administrative and maintenance inefficiency of school facilities are threats to management senior secondary curriculum and students’ academic performance.

Despite the laudable motives which seemed to justify the very high cost of managing the educational system, schools in Adamawa State are not really effective engines for the diverse functions for which they are set up. The performance of the schools as attested to by the academic performances of the students especially at the senior secondary school level have been rather very disappointing. The situation actually tends towards threatening the future of the State. The reports of surveys (for example, the 2011 - 2013 Statistical Report on Women and Men in Nigeria by National Bureau of Statistics, 2014) pointed to the academic performance of secondary school students which have been on the decline for some times now in Adamawa State. The poor performance of students in examinations in Adamawa States, Nigeria had been largely attributed to poor school management (Eguridu, 2012; Anaba, 2013; Udonsa& Udonsa, 2015) and it had been a source of concern to government and stakeholders though the claim cannot be upheld without an investigation to authenticate if it is true as observed by previous studies. It was against this background that this study determined the relationship between administrative and maintenance efficiency of school facilities and academic performance of senior secondary school students in Adamawa State, Nigeria.

III. Research Questions

The study answered the following research questions:
1. What is the level of school facilities administrative efficiency in Senior Secondary Schools of Adamawa State, Nigeria?
2. What is the level of school facilities maintenance efficiency in Senior Secondary Schools of Adamawa State, Nigeria?
3. What is the level of senior secondary school students’ academic performance in Adamawa State, Nigeria?

Research Hypotheses

1. There is no significant relationship between the level of school facilities administrative efficiency and academic performance of senior secondary school students in Adamawa State, Nigeria.
2. There is no significant relationship between the level of school facilities maintenance efficiency and academic performance of senior secondary school students in Adamawa State, Nigeria.

IV. Methodology

The study was carried out using all the public Senior Secondary Schools in Adamawa State, Nigeria (9°20'N 12°30'E) located in the North East Geopolitical zone of Nigeria, with its capital at Yola. Correlational research design was adopted for the study. The target population for the study was 6,717 (19 staff of Adamawa State Ministry of Education Planning Division, 248 school principals and 6,450 teachers). The total sample for the study was 549, made up of 19 staff of Adamawa State Ministry of Education Planning Division, 153 principals and 377 teachers. Three research instruments (Management of School Facilities Questionnaire (MSFQ), Check list and students’ academic performance pro-forma) scored on a four-point response scale were used for data collection. The reliability of the questionnaire was determined through a pilot test using Cronbach alpha. The overall reliability coefficient for MSFQ was 0.76 which gave a high reliability index for the full length of the test.

Descriptive statistics of mean scores and standard deviation were used to answer the research questions and Pearson Product Moment Correlation Coefficient (r) was used for testing null hypotheses. For this study any grand mean above or equal to 2.50 was accepted to indicate that the level of school principals’ administration, school facilities maintenance and students’ academic performance is efficient while any grand mean less than 2.50 indicate inefficiency. A null hypothesis was rejected when the computed p-value is less than 0.05 levels of significance otherwise the null hypothesis was retained when the computed p-value is greater than 0.05 level of significance.
V. Results

Research Question One: What is the level of school facilities administrative efficiency in Senior Secondary Schools of Adamawa State, Nigeria?

Table 1: Summary of Means and Standard Deviations of School Facilities Level of Administrative Efficiency in Adamawa State Senior Secondary Schools

<table>
<thead>
<tr>
<th>S/N</th>
<th>Items</th>
<th>n</th>
<th>VE</th>
<th>E</th>
<th>ME</th>
<th>NE</th>
<th>\bar{x}</th>
<th>s</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>The principal identifies facilities problems promptly</td>
<td>530</td>
<td>175</td>
<td>254</td>
<td>69</td>
<td>32</td>
<td>1.92</td>
<td>0.84</td>
<td>NE</td>
</tr>
<tr>
<td>2</td>
<td>The principal reports facilities problems to appropriate authorities promptly</td>
<td>530</td>
<td>176</td>
<td>232</td>
<td>80</td>
<td>42</td>
<td>1.98</td>
<td>0.90</td>
<td>NE</td>
</tr>
<tr>
<td>3</td>
<td>The principal keeps adequate records of facilities in the school</td>
<td>530</td>
<td>281</td>
<td>144</td>
<td>75</td>
<td>30</td>
<td>1.73</td>
<td>0.91</td>
<td>NE</td>
</tr>
<tr>
<td>4</td>
<td>The principal ensures school facilities are properly maintained to prevent unnecessary interruptions of school activities</td>
<td>530</td>
<td>117</td>
<td>168</td>
<td>221</td>
<td>24</td>
<td>1.29</td>
<td>0.86</td>
<td>NE</td>
</tr>
<tr>
<td>5</td>
<td>The principal offers incentives to staff to encourage them take good care of facilities in the school</td>
<td>530</td>
<td>45</td>
<td>161</td>
<td>210</td>
<td>114</td>
<td>1.74</td>
<td>0.90</td>
<td>NE</td>
</tr>
<tr>
<td>6</td>
<td>The principal maintain a timetable for maintenance of school facilities</td>
<td>530</td>
<td>41</td>
<td>132</td>
<td>86</td>
<td>271</td>
<td>3.11</td>
<td>1.03</td>
<td>E</td>
</tr>
<tr>
<td>7</td>
<td>The principal often develops action plan to get sufficient supply of facilities for our school from the government</td>
<td>530</td>
<td>66</td>
<td>165</td>
<td>147</td>
<td>152</td>
<td>2.73</td>
<td>1.01</td>
<td>E</td>
</tr>
<tr>
<td>8</td>
<td>The principal often reports facility needs of our school to the government for immediate action</td>
<td>530</td>
<td>203</td>
<td>174</td>
<td>67</td>
<td>86</td>
<td>2.07</td>
<td>1.08</td>
<td>NE</td>
</tr>
<tr>
<td>9</td>
<td>The principal always make sure that facilities are handled by experts during usage in the school</td>
<td>530</td>
<td>142</td>
<td>117</td>
<td>90</td>
<td>181</td>
<td>2.59</td>
<td>1.21</td>
<td>E</td>
</tr>
</tbody>
</table>

Grand Mean       2.35    0.97    NE

Result of analysis in Table 1 shows the mean and standard deviation of items on level of school facilities administrative efficiency in senior secondary schools in Adamawa State. The grand mean 2.35 and standard deviation 0.97 indicates that school facilities are not efficiently administered by school administrators.

Research Question Two: What is the level of school facilities maintenance efficiency in Adamawa State Senior Secondary Schools?

Table 2: Summary of Means and Standard Deviations of School Facilities Level of Maintenance Efficiency in Adamawa State Senior Secondary Schools

<table>
<thead>
<tr>
<th>S/N</th>
<th>Items</th>
<th>n</th>
<th>VE</th>
<th>E</th>
<th>ME</th>
<th>NE</th>
<th>\bar{x}</th>
<th>s</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>Cracks on buildings are repaired immediately after discovery</td>
<td>530</td>
<td>69</td>
<td>95</td>
<td>253</td>
<td>113</td>
<td>2.78</td>
<td>0.93</td>
<td>E</td>
</tr>
<tr>
<td>11</td>
<td>Broken furniture (chairs or tables) are quickly repaired</td>
<td>530</td>
<td>130</td>
<td>143</td>
<td>145</td>
<td>112</td>
<td>2.45</td>
<td>1.08</td>
<td>NE</td>
</tr>
<tr>
<td>12</td>
<td>Laboratory equipment are often cleaned to protect them from damage</td>
<td>530</td>
<td>49</td>
<td>139</td>
<td>190</td>
<td>152</td>
<td>2.84</td>
<td>0.95</td>
<td>E</td>
</tr>
<tr>
<td>13</td>
<td>School generator(s) are serviced regularly</td>
<td>530</td>
<td>54</td>
<td>100</td>
<td>224</td>
<td>152</td>
<td>2.89</td>
<td>0.94</td>
<td>E</td>
</tr>
<tr>
<td>14</td>
<td>School computers are regularly serviced</td>
<td>530</td>
<td>40</td>
<td>94</td>
<td>324</td>
<td>72</td>
<td>2.81</td>
<td>0.76</td>
<td>E</td>
</tr>
<tr>
<td>15</td>
<td>Preventive maintenance is carried out on school buildings</td>
<td>530</td>
<td>124</td>
<td>148</td>
<td>160</td>
<td>98</td>
<td>2.43</td>
<td>1.04</td>
<td>NE</td>
</tr>
<tr>
<td>16</td>
<td>Preventive maintenance is carried out on school equipment to avoid total breakdown</td>
<td>530</td>
<td>54</td>
<td>161</td>
<td>204</td>
<td>111</td>
<td>2.70</td>
<td>0.91</td>
<td>E</td>
</tr>
<tr>
<td>17</td>
<td>School buildings repairing are not delayed until they become worst</td>
<td>530</td>
<td>44</td>
<td>100</td>
<td>252</td>
<td>134</td>
<td>2.90</td>
<td>0.87</td>
<td>E</td>
</tr>
<tr>
<td>18</td>
<td>School equipment servicing are not delayed until they breakdown</td>
<td>530</td>
<td>44</td>
<td>100</td>
<td>251</td>
<td>135</td>
<td>2.90</td>
<td>0.88</td>
<td>E</td>
</tr>
<tr>
<td>19</td>
<td>The last time major school facilities repair was done in our school was more than 3 years</td>
<td>530</td>
<td>60</td>
<td>56</td>
<td>145</td>
<td>269</td>
<td>3.18</td>
<td>1.02</td>
<td>E</td>
</tr>
</tbody>
</table>

Grand Mean       2.79    0.94    E
Table 2 shows the mean and standard deviation of items on level of school facilities maintenance efficiency in Adamawa State senior secondary schools. The grand mean of 2.79 and standard deviation of 0.94 indicates that the level of school facilities maintenance by school administrators in Adamawa State senior secondary school is efficient.

**Research Question Three**: What is the level of students’ academic performance in Adamawa State senior secondary schools?

### Table 3: Summary of Means and Standard Deviations of Students’ Academic Performance in WAEC/SSCE May/June 2013 – 2015 in Adamawa State Senior Secondary Schools

<table>
<thead>
<tr>
<th>Year</th>
<th>n</th>
<th>A1 – B3</th>
<th>C4 – C6</th>
<th>P7 – P8</th>
<th>F9</th>
<th>( \bar{x} )</th>
<th>s</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
<td>5,935</td>
<td>351</td>
<td>1,754</td>
<td>1,565</td>
<td>2,265</td>
<td>2.27</td>
<td>0.64</td>
<td>Poor</td>
</tr>
<tr>
<td>2014</td>
<td>6,626</td>
<td>708</td>
<td>3,067</td>
<td>921</td>
<td>1,930</td>
<td>1.93</td>
<td>0.72</td>
<td>Poor</td>
</tr>
<tr>
<td>2015</td>
<td>4,435</td>
<td>844</td>
<td>408</td>
<td>862</td>
<td>2,321</td>
<td>2.32</td>
<td>0.89</td>
<td>Poor</td>
</tr>
<tr>
<td>Grand Mean</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2.12</td>
<td>0.75</td>
<td>Poor</td>
</tr>
</tbody>
</table>

### Table 4: Summary of Pearson Product Moment Correlation Coefficient Level of School Facilities Administrative Efficiency and Students’ Academic Performance

<table>
<thead>
<tr>
<th>Variables</th>
<th>n</th>
<th>( \bar{x} )</th>
<th>r</th>
<th>p-value</th>
<th>Relationship</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>LSFAD</td>
<td>530</td>
<td>2.35</td>
<td>0.205</td>
<td>0.000</td>
<td>Low</td>
<td>Significant</td>
</tr>
<tr>
<td>LSAP</td>
<td>530</td>
<td>2.12</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The relationship between level of school facilities administrative efficiency and students’ academic performance was tested using Pearson Product Moment Correlation Coefficients. As the p-value (0.000) is less than 0.05 level of significance, the null hypothesis was rejected. The computed r-value - 0.205 indicates that there was a low positive correlation between school facilities administrative efficiency and students’ academic performance in Adamawa State senior secondary schools.

### Hypothesis One: There is no significant relationship between level of school facilities administrative efficiency and academic performance of senior secondary school students in Adamawa State, Nigeria.

### Table 5: Summary of Pearson Product Moment Correlation Coefficient Level of School Facilities Maintenance Efficiency and Students’ Academic Performance

<table>
<thead>
<tr>
<th>Variables</th>
<th>n</th>
<th>( \bar{x} )</th>
<th>r</th>
<th>p-value</th>
<th>Relationship</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>LSFME</td>
<td>530</td>
<td>2.79</td>
<td>0.260</td>
<td>0.000</td>
<td>Low</td>
<td>Significant</td>
</tr>
<tr>
<td>LSAP</td>
<td>530</td>
<td>2.12</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The relationship between level of school facilities maintenance efficiency and students’ academic performance was tested using Pearson Product Moment Correlation Coefficient. The result in Table 10 shows that there was a low positive relationship between school facilities maintenance efficiency and senior secondary school students’ academic performance in Adamawa State. Therefore, since the p-value (0.000) is less than 0.05 and the computed r-value - 0.260, the null hypothesis was rejected.

**Hypothesis Two**: There is no significant relationship between level of school facilities maintenance efficiency and academic performance of senior secondary school students in Adamawa State.

### VI. Discussion of the Findings

The findings of this study were discussed in relation to two facilities management variables (administrative efficiency, maintenance efficiency) and students’ academic performance raised in the purpose of the study.

The findings of this study with regard to level of school facilities administrative efficiency put into the management of school facilities by school administrators was not efficient (Table 3) in Adamawa State Senior Secondary Schools as revealed by the grand mean (2.35) and standard deviation (0.97) of items 1 – 9. This is in consideration of the fact that school principals do not identify, keep adequate records or report school facilities problems promptly to the responsible authorities for proper action in Adamawa State. Notwithstanding the study has revealed (Table 3) that school administrators in Adamawa State maintain time-table for facilities maintenance and they ensure that school facilities are handled by experts. Supporting this...
finding, Amanchukwu and Ololube (2015) concluded that since Ministry workers do not stay in schools on a daily basis in order to dictate what is going wrong or right with the school facilities, it is the responsibility of school principals as the custodians of school facilities to ensure that all components of school facilities are in good working condition so as to create conducive teaching/learning environment which they do not take seriously. Similarly, Allen (2015) supported this finding (Table 3) that, inefficient school facilities administration is bound to happen in schools when school administrators do not delegate authorities to their subordinates because they want to have eye on everything that is being done thereby delaying other areas that needed urgent attention.

The findings from this study revealed the level of school facilities maintenance efficiency in Adamawa State senior secondary school to be efficient (Table 4). This was indicated by the grand mean (2.79) and standard deviation (0.94) on all items 10 – 19 in Table 4. Supporting the report from this study Vandiver (2011) and SchoolDude (2014) revealed that continuous existence and utilization of school facilities can only be achieved through quick and regular servicing and repairing of broken down facilities through preventive maintenance. On the contrary, Allen (2015) revealed that management of school facilities through maintenance in secondary schools has not been achieved and as a result schools have failed to achieve its intended objectives nowadays because facilities are not serviced or repaired promptly until they become worst or broke down.

The level of students’ academic performance in WAEC/SSCE May/June (2013 – 2015) in Adamawa State Senior Secondary Schools (Table 6) was poor as indicated by the grand mean and standard deviation 2.12±0.75 respectively. This finding is consistent with Anaba (2013) and Collins (2015) conclusions that the level of students’ academic performance in Adamawa State senior secondary school was poor. Collins (2015) revealed that about 93% of senior secondary school leavers in any given year have fail to qualify for tertiary education in Adamawa State. Collins reported that only 7.87% had 5 credit in 2013. Adamawa State was ranked 27th and 28th in 2014 and 2015 respectively, with 8.75% and 18.08% performance in WAEC, ranking least among other States whose students obtained 5 credit passes in Nigeria compared to Anambra State who ranked highest with 65.92% in 2014 (Abah, 2016).

Table 9 revealed significantly low positive relationship between level of school facilities administrative efficiency and students’ academic performance in Adamawa State Senior Secondary Schools (r = 0.205, p < 0.05). This finding was consistent with the findings of previous researchers (Olahube, 2006; Eddy & Akpan, 2009; Muraina & Muraina, 2014) who established significant relationship between school facilities administration (supervision and coordination) and students’ academic performance in Nigeria. Uko, Umosen and Caleb (2015) supporting the finding also revealed that poor facilities administration have negative effect on teachers’ job performance which is reflected in poor academic performance of students in public examinations. It has however been observed that the poor quality of some teachers who are currently school principals arose from people who were recruited and appointed based on political affiliation and considerations (Ali & Sunday, 2013). This does not allow for fairness and prompt identification and reporting of facilities problems to appropriate authorities but rather poor students’ academic performance in external examinations.

The findings in respect of hypothesis 4 (Table 10) revealed significantly low positive relationship between level of school facilities maintenance efficiency and students’ academic performance in Adamawa State Senior Secondary Schools. Efficient school facilities maintenance according to Edward (2012) is a precondition for strong academic program and students’ performance. This shows that prompt repairing of broken walls, chairs, tables and regular servicing of equipment as a proactive measure to sustain the life-span of school facilities are related to students’ academic performance in Adamawa State. Uchendu, Ekanem and Jonah (2013) revealed that poor school facilities maintenance are indicated by either poor physical appearance, un tidy walls, leaking roofs, overgrown compounds etc of a school, which suggests that education within the buildings follow the same pattern. The finding is consistent with Liar (2003) and Odigwe and Eluwa (2013) findings, that revealed a positive relationship between school facilities maintenance and students’ academic performance.

VII. Recommendation

The following recommendations based on the findings of the study and their implications are made:

1. School principals should frequently carry out comprehensive assessment of the facilities in their schools to determine areas of need. This type of assessment will assist the planning division of Ministry of Education in policy formulation as it relates to facility management in Senior Secondary Schools;
2. Schools principals should be sensitized to lobby for resources from the Ministry of Education or philanthropist in the host communities to acquire facilities that are important for the success of schools in academic performance;
3. All Senior Secondary Schools to start income generating activities and form organizations for old students to help raise funds to subsidize the government funding. In addition, the monthly
subvention given to senior secondary school should be increased and be disbursed regularly and without much delay. This would enable school administrators maintain the available school facilities through regular servicing.

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