Towards Improving School Facilities in the Universal Basic Education Scheme for the Achievement of Millennium Development Goals (MDGs) For Sustainability

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Abstract
The study assessed the Universal Basic Education and the extent of achievement of Millennium Development Goals (MDGs) for sustainability from the perspective of availability of school facilities and their influence on students’ academic achievement. The population for the study consisted of all the 1,450 Junior Secondary three students in all the 12 public secondary schools of the 2010/2011 Academic session in Eket Senatorial District in Akwa Ibom State, from which a sample of 300 JSS3 students were selected using the simple random sampling technique. Two researcher – developed instruments were used namely: School Facility Questionnaire (SFQ) and Social Studies Achievement Test (SSAT); in collecting data for the study. The instruments were tested for reliability and the reliability coefficients ranged from .69 to .96. Data collected were analyzed using Analysis of Variance. The findings of the study indicated that there is a significant difference in the mean scores of students’ academic achievement based on availability of school facilities. It was recommended, among others, that educational consultants, architects and administrators be critically aware of the importance attached to the compatibility between the physical environment and student learning and should work towards finding lasting solution to the problem of old and
dilapidated school buildings and infrastructures if the objectives of the Universal Basic Education are to be met for the achievement of the Millennium Development Goals.

In September, 2000, 189 world leaders met at the Millennium summit and committed themselves and their countries to eight goals known as Millennium Development Goals (MDGs) aimed at meeting the needs of the world’s poorest people (UNDP, 2005). These goals resulted from deliberations on how to make significant, measurable improvements to people’s lives, with the ultimate objective of reducing poverty throughout the world. The eight goals, which are to be met in partnership with the world’s leading development institutions by the target date of 2015 are to: eradicate extreme hunger and poverty; achieve universal primary education; promote gender equality and empower women; reduce child mortality; improve maternal health; combat HIV/AIDS, malaria and other diseases, ensure environmental sustainability; and, develop a global partnership for development.

The attainment of these goals has been a challenge to the nations of the world and significant progress has been recorded worldwide (United Nations, 2005). According to Ejieh (2009), the Federal Government of Nigeria faces the challenge of meeting the MDGs, and believes that the attainment of the goals will be put in jeopardy as long as the human and material resources of the country remain untapped. One of the strategies adopted by the country in her multi-pronged approach towards attaining these goals and meeting the needs of people is the empowerment of people through education.

The Universal Basic Education (UBE) was launched in Nigeria in September 1999 as one of the strategies aimed at implementing the educational component of the MDGs. With the passage of the UBE Act, all tiers of government in the country are mandated to provide free, compulsory nine-year universal basic education of primary and junior secondary school age. Parents were requested to ensure that they register their children for and complete the basic education cycle. There are sanctions for parents who do not comply. In addition to free tuition, the Act provides for free services in all public primary and junior secondary schools (Obong, 2006).

In order to ensure effective implementation of the UBE, the Act established the Universal Basic Education Commission, with prescribed functions, membership terms and structure. Universal Basic Education Boards (UBEBs) were also established at the State and Local Government levels. The commission set for itself some short and medium-term objectives with appropriate performance indicators. Some of the objectives include the widening of access to primary and junior secondary education, periodic review and effective implementation of the curriculum, improving gender equity, reducing the spread of HIV and mitigating the impact of AIDS as well as mobilizing and developing partnerships with international agencies, private and local communities (Obong, 2006).
A cursory glance at some of these objectives show that they are targeted at achieving the basic components of the MDGs such as universal primary education, gender equality, combating HIV/AIDS, and developing global partnerships for development. The question now arises – how far has the government gone in matching the objectives of UBE with actions such as providing the basic facilities needed in schools for effective implementation of the UBE programme for the achievement of the Millennium Development Goals? School facilities here, may cover areas such as school building age, thermal comfort, lighting, acoustics, indoor air quality, among others.

Many research studies have been conducted in the area of school facilities and students’ achievement. One of such studies was that carried out by Ikpa (1992) who found a significantly negative relationship between the age of school buildings and achievement. He found that students in the newer building (modern) performed much better than the students in the older building. The students in the modern building also had a better record in the areas of health, attendance, and discipline.

Classroom lighting plays a particularly critical role in student performance (Benya, 2001). Obviously students cannot study unless lighting is adequate, and there have been many studies reporting lighting levels and students academic achievement. Example of such studies include that of Jago and Tanner (1999); Benya (2001); Plympton, Conway, and Epstan (2000). This study will examine the availability of new buildings and lighting facilities in schools for the implementation of the Universal Basic Education and achievement of the Millennium Development Goals (MDGs).

The research linking acoustics to learning is consistent and convincing: good acoustics are fundamental to good academic performance. In one of their many synthesis of existing work, Earthman and Lemasters (2001) reported three key findings: that higher student achievement is associated with schools that have less external noise, that outside noise causes increased student dissatisfaction with their classrooms, and that excessive noise causes stress in students. There is also evidence of a cumulative effect of excessive classroom noise on a child’s academic achievement level. These problems are more acute for children who may have hearing impediments (Nelson and Soli, 2000). Noise levels influence verbal interaction, reading comprehension, blood pressure, and cognitive task success and may induce feelings of helplessness, inability to concentrate, and lack of extended application to learning tasks.

Researchers have been studying the temperature range associated with better learning for several decades. Research also shows that even within commonly acceptable temperature spans, there are specific ranges that increase individual performance. Thermal factors may seriously degrade teachers’ abilities to teach and may also affect their morale (Heschong, 2002). Lowe (1990) found that the best teachers in the country emphasized their ability to control classroom temperature as central to the performance of teachers and students. Lackney (1999) showed that
teachers believe that thermal comfort affects both teaching quality and student achievement.

In the light of the significance of school facilities in students’ academic achievement, it is needful to assess the availability of some of these school facilities and students’ achievement in junior secondary social studies classrooms in the Universal Basic Education Programme in Eket Senatorial District in Akwa Ibom State.

**Hypothesis**

There is no significant influence of school facilities on students’ academic achievement in social studies.

**Method**

The ex-post facto research design was used for the study. The population for this study consisted of all the 1,450 Junior secondary three (JSS3) students in all the 12 public secondary schools of the 2010/2011 academic session in Eket Senatorial District in Akwa Ibom State. The sample for this study consisted of 300 Junior Secondary three students who were randomly selected from the 12 public secondary schools in the ratio of 1:25.

The instruments used in gathering data for the study was School Facility Questionnaire (SFQ) and Social Studies Achievement Test (SSAT). The SFQ consisted of 10 items with yes/No response while the SSAT consisted of 50 objective questions which were constructed to cover the second term scheme of work for JSS 3 to test the students’ academic achievement in social studies. The instruments were vetted by two experts from the field of Test and Measurement in the Department of Educational Foundations/Guidance and Counselling, University of Uyo, Uyo, for content validity. Their suggestions were incorporated into the final draft of the instruments. A pilot test was conducted for the purpose of ensuring the reliability of the instrument. The School Facility Questionnaire (SFQ) and Social Studies Achievement Test (SSAT) were administered on 20 students that were not included in the study sample. The data obtained from the School Facility Questionnaire (SFQ) was subjected to cronbach alpha test for reliability and the reliability coefficient was .96. The second instrument, Social Studies Achievement Test (SSAT) was also pilot tested using the same respondents and was subjected to test-retest form of reliability. The reliability coefficient was .68. On the basis of the high reliability indices, the instrument was deemed suitable for use in conducting the study.

The research instruments were administered personally with the aid of class teachers in schools in Eket Senatorial District. Instructions were carefully read to the respondents where necessary. The SSAT was dichotomously scored, that is, one (1) point for any right answer and zero (0) for wrong answer and was multiplied by 2 to meet the format of their Continuous Assessment. The SSAT was scored over 100 in
line with the grading system of their continuous Assessment. The research hypothesis was analyzed using Analysis of Variance (ANOVA).

**Result**

Table 1: Analysis of Variance (ANOVA) of the Influence of School Facilities on Students’ Academic Achievement in Social Studies

<table>
<thead>
<tr>
<th>Source of variation</th>
<th>Degree of Freedom</th>
<th>Sum of squares</th>
<th>Mean squares</th>
<th>F-cal</th>
<th>F-crit</th>
<th>Decision at P&lt;.05</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between groups</td>
<td>4</td>
<td>12278.786</td>
<td>3069.81</td>
<td>8.37</td>
<td>0.000</td>
<td>Significant</td>
</tr>
<tr>
<td>Within groups</td>
<td>295</td>
<td>108133.7</td>
<td>366.554</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>299</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Significant at .05 level; df = 4, 295; critical value = 0.000

**Decision:** Since F-cal (8.37) is greater than the critical F-Value (0.00), the null hypothesis is rejected. The conclusion is that school facilities significantly influence students’ academic achievement in social studies. Post-Hoc test was conducted to determine which of the school facilities was highly significant among others.

Table 2: Scheffe’s Post-Hoc Test of the Difference in Students’ Academic Achievement Based on School Facilities

<table>
<thead>
<tr>
<th>Classroom facilities (i)</th>
<th>Classroom facilities (j)</th>
<th>Mean difference (i-j)</th>
<th>Std. error</th>
<th>Sign.</th>
<th>95% lower bound</th>
<th>Confidenc upper bound</th>
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</thead>
<tbody>
<tr>
<td>Light (1.00)</td>
<td>3.00</td>
<td>6.0100</td>
<td>3.9304</td>
<td>.674</td>
<td>-6.1685</td>
<td>18.1885</td>
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<tr>
<td></td>
<td>4.00</td>
<td>15.2850*</td>
<td>3.3402</td>
<td>.000</td>
<td>-4.4786</td>
<td>25.6348</td>
</tr>
<tr>
<td></td>
<td>5.00</td>
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<td>4.2788</td>
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<td>-18.0650</td>
<td>8.4516</td>
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<tr>
<td>Colour (2.00)</td>
<td>1.00</td>
<td>-6.0100</td>
<td>3.9304</td>
<td>.674</td>
<td>-18.1885</td>
<td>6.1685</td>
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<tr>
<td></td>
<td>3.00</td>
<td>-8.250</td>
<td>3.3827</td>
<td>1.000</td>
<td>-11.3066</td>
<td>9.6566</td>
</tr>
<tr>
<td></td>
<td>4.00</td>
<td>9.2750</td>
<td>3.5879</td>
<td>.157</td>
<td>-1.8424</td>
<td>20.3924</td>
</tr>
<tr>
<td></td>
<td>5.00</td>
<td>-10.8167</td>
<td>4.4749</td>
<td>.214</td>
<td>-24.6825</td>
<td>3.0492</td>
</tr>
<tr>
<td>Acoustic quality (3.00_</td>
<td>1.00</td>
<td>-5.1850</td>
<td>3.1187</td>
<td>.599</td>
<td>-14.8486</td>
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<td></td>
<td>2.00</td>
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<td>3.3827</td>
<td>1.000</td>
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<td></td>
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<td>10.1000*</td>
<td>2.6743</td>
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<td>5.00</td>
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<td>3.7820</td>
<td>.140</td>
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<td>1.7271</td>
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<td>3.3402</td>
<td>.000</td>
<td>-25.6348</td>
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<td></td>
<td>5.00</td>
<td>-20.0917</td>
<td>3.9666</td>
<td>.000</td>
<td>-32.3825</td>
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<tr>
<td>School building Age (5.00)</td>
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<td>4.2788</td>
<td>.868</td>
<td>-8.4516</td>
<td>18.0650</td>
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<tr>
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<td>10.8167</td>
<td>44.4749</td>
<td>.214</td>
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<td>.000</td>
<td>7.8009</td>
<td>32.3825</td>
</tr>
</tbody>
</table>

* The mean difference is significant at .05 level.

Information presented on Table 2 shows that acoustic quality was more significant among other school facilities selected for the study.
Discussion

Table 1 indicated that school facilities significantly influence students’ academic achievement in social studies. This finding is in agreement with the findings of Ikpa (1992) who found a significantly negative relationship between the age of school buildings and achievement. Students in the modern school building are excited and have a better record in the areas of health, attendance and discipline which positively impact on their academic achievement.

Also, in line with Benya (2001), classroom lighting has been found to play critical role in students’ performance. Obviously, students cannot study unless lighting is adequate. Another important school facility is acoustics which has to do with the citation of schools away from excessive noise areas. It is generally agreed that school acoustics matter, in agreement with Fisher (2000) that high noise levels causes stress. Noise levels influence verbal interaction, reading comprehension, blood pressure, and cognitive task success and may induce feelings of helplessness, inability to concentrate, and lack of extended application to learning tasks.

Thermal factors seriously degrade teachers’ abilities to teach and may also affect their morale. This agrees with Lowe (1990) who found that the best teachers in the country emphasized their ability to control classroom temperature as central to the performance of teachers and students.

Recommendations

1. Good educational facilities are indispensable to the achievement of the objectives of the Universal Basic Education. Therefore, government should provide funds for the provision of these facilities in schools.
2. Based on the findings in the area of school building age and academic achievement, it is vital that educational consultants, architects and administrators be critically aware of the importance attached to the compatibility between the physical environment and student learning and find lasting solution to the problem of dilapidated school buildings and structures.
3. There is need to erect more school structures/buildings to take care of large class size experienced in schools as an aftermath of the introduction of the Universal Basic Education for the Millennium Development Goals to be achieved for sustainability.
4. To successfully implement the Universal Basic Education Scheme, there is need for a survey of the existing resources and facilities in schools in order to detect problem areas and address them at an early stage for sustainable development.

Conclusion

Based on the findings of this research study, it is concluded that school facilities affect learning. Spatial configurations, noise, heat, cold, light and air obviously bear on students’ and teachers’ ability to perform.
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References


