Education Infrastructure in Nigeria: An Analysis of Provision of School Building Facility in Secondary Schools in Delta State Nigeria

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Abstract

This study discussed school building facility provision in secondary schools in Delta State, Nigeria. It examined the crucial issue in the implementation of educational policies and programmes and placed emphasis on the school buildings and the equipment used in the process of teaching and learning. School facilities require careful planning in its provision, utilization, and maintenance to meet the increasing demand for education and enhance the maximum realization of the target set in the National Policy on Education. The resource dependency theory propounded by Pfeffer and Salancik in 1978 was used as the framework for the study. As part of the study, an effort was made to examine the state of available school buildings. A survey of 30 secondary schools selected through stratified and simple random sampling technique was carried out. Data were analysed using frequency counts and percentages. The findings revealed that most of the schools did not have adequate school buildings to support the educational programme projected. It was recommended, among others, that emphasis be placed on the provision of functional buildings, laboratories, and studios for the teaching of science subjects, introductory technology and other practical subjects like music, fine art, among others.

Keywords: School building, facility provision, secondary schools, availability, adequacy
School facilities have been described as a powerful factor for quantitative and qualitative education (Yadar, 2007; Yara & Otieno, 2010; Gometi, 2011). Facilities generally constitute a strategic factor in the functioning of any organization. This is important because they determine the smooth running of any social system including education because of their availability, adequacy, relevance, influence, efficiency and high productivity. It is expected that the wealth of any nation or society could determine the quality of education in such nation because, a wealthy society should be able to establish good schools with quality teachers and learning infrastructures so that students can learn with ease and attain good academic success. However, this seems not to be the case in Nigeria because a lot of secondary school managers face great challenges in the process of implementing school programmes.

Researches abound on the poor and inadequate state of physical facilities in secondary schools; (Yadar, 2007; Yara & Otieno, 2010; Owoeye & Yara, 2011). School facilities when provided aid teaching and learning and subsequently improve the academic achievement of students, but the criteria guiding their provision to schools take different forms, for instance, it can be either through rational bureaucratic or political model and whichever is adopted, there is always a common feature of inconsistent allocation of facilities to schools. Certain schools are favoured in the allocation of facilities at the expense of others, (an example is the 2014 renovation of some selected secondary schools in Delta State; most schools renovated were in urban centres and along major roads) the school managers are virtually left out of the process. Allocation of these facilities is almost always politically motivated without due consideration of areas of need.

According to Gometi (2011) school facilities include the school buildings, classrooms, accommodation, libraries, laboratories, furniture, recreational equipment, apparatus and other instructional materials, their availability, adequacy and relevance to academic achievement. In the same vein, Owoeye and Yara (2011) stated that unattractive school buildings and overcrowded classrooms among others contribute to poor academic achievement in the school system. Classroom space is very important to 21st century learning such that the students can work in teams, solve problems and communicate effectively (Turupere, 2016). Overcrowded schools and classrooms have been linked consistently with increased levels of aggression in students. This is associated with decreased levels of student engagement and decreased levels of learning. Classrooms with ample space are more conducive to providing appropriate learning environments for students and are associated with increased student engagement and learning. The availability of school buildings in the context of this study refers to the physical structures available for the school programme, while adequacy of school buildings refers to the extent to which the available buildings and instructional spaces meet the quantitative and qualitative requirement of the educational programme. This covers the size, shape, number, and quality of the instructional space (Gometi, 2011).

**Provision of School Buildings**

Adequate provision of school buildings and facilities bring about conducive teaching and learning environment for teachers, students and other staff members to perform their duties effectively. A good school environment fosters desirable behaviour, creativity, harmonious relationship and problem-solving skills among students. According to Yusuf & Oluwarotimi (2011), school facilities provision should be undertaken after diagnosing and estimating school requirements and identifying the ideal communities and sites where new schools and facilities are to be located, and where additional resources are to be provided to meet current and future needs of education in society. The major purpose of school facilities provision is to
set up a school network which would meet future demand for education. In the Nigerian educational system, the main purpose of school facilities provision is to help realize the targets set in the national policy on education which includes:

- Provision of compulsory education to include junior secondary level, thus creating a nine-year basic education;
- Provision of free universal basic primary education;
- Extension of higher and other forms of education within the limits of the resources available and the country’s economic and social requirements;
- Implementation of educational reforms
- Improved efficiency in the use of resources (FRN, 2004).

To achieve these goals and objectives the educational sector especially the secondary schools need proper planning to provide required educational facilities and school buildings in schools already established. Educational programmes, therefore, should be planned to transform the educational scene by improving and expanding the existing school facilities and buildings which also must be properly managed and maintained by the school managers.

The constitution of the Federal Republic of Nigeria (1979) declared education as a right to all citizens and so there is the need to plan and provide for future expansion since there is a tendency for high population growth. Enrolment in secondary schools has been on the increase for the past three decades (Ogonor & Sanni, 2001; Tanner 2006). The government of the day should take this into consideration in the provision of school buildings for effective teaching and learning which will subsequently lead to the achievement of the goals of the National Policy on Education. The rapidly changing Nigerian political and socio-economic environments affect the education sector. As the second tier of education, secondary education has become the base for formulating national policies which when implemented, is expected to enhance growth and development (Chukwuka, 2013). Hence, the Ministry of Education plans and directs educational policies to meet up with United Nations programmes on education; the Millennium Development Goals (MDGs), universal and equal education; and the National Economic Empowerment and Development Strategy (NEEDS), (Nwankwa & Omotere, 2013).

Several studies (Dechiara & Crosbie, 2001; De Jong, 2001; Feliz, 2004; Tanner, 2006; Gometi, 2010; Usen, 2016) have shown that effective learning is enhanced by the provision of adequate educational facilities and school buildings in quantity and quality, Turupere (2016); and Ajayi and Yusuf (2009) maintain that high levels of students’ academic performance may not be guaranteed where instructional space such as classrooms, libraries, technical workshops, and laboratories are structurally defective or not available and adequate. The assertions of Williams, Persaud, and Turner (2008) and Usen (2016) further support the view that a safe and orderly classroom environment and school facilities were significantly related to students’ academic achievement. They also asserted that a comfortable and caring environment among other factors help to contribute to students’ academic performance. According to Chukwuka (2013), the major objective of the Universal Basic Education (UBE) was to reduce junior secondary schools’ illiteracy and ensure the acquisition of functional skills for the alleviation of poverty. Notable among the subjects to be taught in the junior secondary school was introductory technology which is meant to provide basic knowledge for industrial technology. It is designed to expose the students to the appreciation of technology and subsequently develop their interest in various areas of industrial technology. Introductory technology as a subject comprises of basic electricity, electronics, metal work and wood work, elementary building construction, technical drawing, food preservation and storage and other miscellaneous topics.
As laudable as this programme is, it was revealed by Gometi (2010) that most of the schools that taught introductory technology had the machines and equipment supplied but abandoned outside the classrooms because they could not be accommodated; they needed to be installed in special/suitable school buildings. The school managers could not help the situation because they were not consulted before such equipment were sent to their schools. No wonder till date the teaching of introductory technology which is practical in nature is still based on only theory, so the students lack practical skills. It, therefore, means that even when educational policies and programmes are put in place, it requires the political will of the planners to implement the policies to achieve desirable results. Quality issues need to be addressed to provide the most appropriate physical environment for education.

Improving the quality of school facilities and buildings, and locating them in appropriate places within the schools to meet the needs of the users cannot be overemphasized. It is true that improving the quality of school facilities especially school buildings is an expensive undertaking, but when the positive impacts of facility improvement on teachers and students are translated into monetary figures, the rewards of such investments far outweigh the cost of the investments. The challenge is to create physical facilities that respond to a variety of criteria; they need to be functional, economic, structurally sound and attractive. This requires architects and educational planners to see themselves as members of a multi-disciplinary team which should also include furniture designers, engineers, building cost specialists, educational economists and town and country planners. It is obvious that an effective school building investments policy will provide useful guides for building the right kind of schools in the right places at the appropriate time and will be cost effective.

Many studies (Ogonor & Sanni, 2001; Yadar, 2007; Yara & Otieno, 2010; Owoeye & Yara, 2011) provide evidence of poor student academic performance because of overcrowded classrooms and lack of science laboratories in secondary schools. The problem of ineffective implementation of continuous assessment by school managers and teachers is also blamed on overcrowded classrooms and inadequate school facilities. But not much is known about availability and adequacy of school buildings. This study was therefore carried out to assess the state of available school buildings to find out whether the policy of getting all children to school is well catered for in respect of adequate building facilities to accommodate students and provide the necessary conducive environment for effective teaching and learning. The major concern of this study was to analyze the existing pattern of distribution of school buildings: classrooms, administrative offices, libraries, laboratories, assembly halls, staffrooms, libraries, studios, workshops, toilet facilities, etc., in different schools, to find out their adequacy in quantity and quality.

Some researchers (Adeyemi & Adi, 2010; Olasunkanni & Odunaya, 2012; Oleforo & Maxwell, 2015; Osuji, 2016) carried out studies on the influence of school facilities on students’ performance in some states in Nigeria – Ekiti State, Lagos State, Akwa Ibom State, Kaduna State respectively. These researches focused on the effect of school facilities on the performance of students, but the present research focused on the adequacy and availability of school buildings to find out whether they are adequate to carry out the programme of secondary education in Delta State as provided in the national policy on education (2004). This study, therefore, set out to analyze the provision of school buildings in Delta state, because it appears that not much has been done to find out the specific school buildings needed for the effective secondary education system, their availability, and adequacy. Identifying the types of school buildings needed, their availability and adequacy for effective implementation of the secondary education programme in Delta State can help the
government and education planners to provide the school buildings that are needed to enhance the effectiveness and efficiency of secondary education programme in Delta State, Nigeria.

Theoretical underpinning
The Theoretical framework adopted for the present study is the resource dependency theory propounded by Pfeffer and Salancik (1978). The resource dependency theory is the study of how the external resources of organisations affect the behaviour of the organisation. Elkenberry and Klover, (2004) enumerated the basic features of resource dependency theory as follows:

1) That organisations depend on resources
2) These resources ultimately originate from an organisation’s environment
3) The environment, to a considerable extent, contains other organisations
4) Resources are a basis of power

Resource dependency theory by Pfeffer and Salancik, (1978) cited in Elkenberry and Klover, (2004) states that organizations depend on multidimensional resources: labour, capital, raw materials, etc. and that though organisations may not be able to come out with countervailing initiatives for all multiple resources, they must move through the principle of criticality and principle of scarcity. Critical resources are those resources that the organization must have to function. Mcdowl, (2018) opines that resource dependency theory views an organization in terms of its resource dependencies with other firms in the environment. He also stated that resources come in different forms and they are valued depending on their importance and availability, and they differ in terms of who has discretion and control over them. Explaining further, Mcdowl, (2018) pointed out that there are various types of resources that firms depend on, such as physical materials which might be actual materials that organisations build a product from. They could be technical such as information or knowledge, or social resources such as prestige or reputation that enables them to survive, all these resources differ depending on its importance. Resources dependency theory differs from a variety of factors due to their importance and availability.

The present study adopted this theory because the school system is a social organisation that also depends on various resources to survive. There is no worthwhile education system that can ignore healthy and functional school buildings which are essential to the effective realization of its educational goals. The Resources Dependency Theory emphasized the importance of resources to the organization’s continual operation and survival. Relating this to the school system, it could be construed that schools cannot survive without resources as there would be no students, if schools cannot survive due to lack of resources; it could be hypothesized that the perceptions of government, policy makers and school administrators on resource dependency should clearly play a large part in their reactions in making rules and appropriating funds for specific educational programmes. The challenge for them is to determine the extent to which they can and must respond to various demands of school programmes in respect of school buildings without potentially affecting the entire operation adversely.

The adequate provision of school buildings for effective teaching and learning is based on a sound perception of the task to be done which is reflected in the exhibition of behavioral patterns by all stakeholders. This will stimulate teachers and students to attain desired goals. If this is not done, both teachers and learners including school administrators face role strain that could lead to poor performance in the school system. The researchers believe that if all stakeholders in the school system consider school buildings as valuable assets that are critical
to the achievement of educational goals of the society, provision of adequate school buildings and its utilization will be given priority. The above theory is illustrated by the model below.


From the above model, it is observed that the provision of school buildings will mean having adequate school buildings which will lead to the conducive environment and consequently the products from that environment. The resource dependency theory concentrates on the importance of the quantity and quality of resources (school buildings) as the major determinant of the products (educated students) of the school environment as was reflected in Olugbenga (1997) that the level of resources available to any educational system and the way they are used will determine, to a great extent, the performance of that system. Therefore, the educational system and its productivity depend on the availability and adequacy of school buildings. The studies (Olasunkanni and Odunaya, 2012; Osuji, 2016) lends credence to the above as their studies found out that provision of school facilities and buildings should be considered first before mounting an educational programme. It is against this background that this study was carried out. Based on the literature reviewed, this study formulates the following research questions;

1) What types of school buildings are available in the secondary schools?
2) Are the available school buildings in secondary schools adequate?

Methods
A descriptive research survey design was used in this study. Survey design aims at the systematic description of the characteristics of a population as they are. It also makes it possible for respondents to provide personal opinions about phenomena or subjects being investigated, using various instruments such as a questionnaire or checklist (Bernard & Bernard, 2012; Punch, 2013). This design was used for this study because the instrument used gave meaning to the quality and present standing of facts about the buildings as they are. The study has a total of two hundred and ninety-eight (298) public secondary schools in Delta State. A stratified and simple random sampling technique was used to select the sample from the twenty-five (25) local government areas of the state. A sample of thirty (30) schools was used, two (2) from the five local government areas that have more than twenty schools and one each from the others. This represents 10% of the population, which agrees with Roscoe (1977) who supported the use of a sample size of 10%. A self-developed instrument entitled Quantitative Survey on Available School Buildings Checklist and rating scale (QSASBCARS) was used to collect data. Principals or their vice principals were required to
tick the corresponding response; (available, not available, adequate, not adequate; and under condition/state, were required to tick well, needs repair, or dilapidated). The instrument was administered with the aid of three research assistants after being trained on how to administer the instrument. The researchers also carried out on the spot check using the same checklist and rating scale. Analysis of data was carried out using simple frequency counts and percentages.

**Results**

This section presents the results and discussion of the findings based on quantitative data analysis. The data was collected to answer the key research objectives of the study.

**Availability of school buildings in Delta state public secondary schools**

**Table 1**

*Analysis of types of school buildings available in public schools in Delta State*

<table>
<thead>
<tr>
<th>School Building Facility</th>
<th>No of Schools that had each facility</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assembly hall</td>
<td>13</td>
<td>43.3</td>
</tr>
<tr>
<td>Staffroom</td>
<td>17</td>
<td>56.7</td>
</tr>
<tr>
<td>Classroom</td>
<td>25</td>
<td>83.3</td>
</tr>
<tr>
<td>Administrative Office</td>
<td>10</td>
<td>33.3</td>
</tr>
<tr>
<td>Music Studio</td>
<td>5</td>
<td>16.7</td>
</tr>
<tr>
<td>Arts Studio</td>
<td>2</td>
<td>6.7</td>
</tr>
<tr>
<td>Library</td>
<td>6</td>
<td>20</td>
</tr>
<tr>
<td>Biology lab</td>
<td>8</td>
<td>26.7</td>
</tr>
<tr>
<td>Physics lab</td>
<td>6</td>
<td>20</td>
</tr>
<tr>
<td>Chemistry lab</td>
<td>8</td>
<td>26.7</td>
</tr>
<tr>
<td>Intro tech lab</td>
<td>2</td>
<td>6.7</td>
</tr>
<tr>
<td>Home Economics Lab</td>
<td>2</td>
<td>6.7</td>
</tr>
<tr>
<td>Toilet</td>
<td>5</td>
<td>16.7</td>
</tr>
</tbody>
</table>

*Source: Field Study (2018)*

Adequacy of school buildings in the public secondary schools

**Table 2**

*Data analysis on the adequacy of available school buildings in public secondary schools in Delta State*
### School Building Facility

<table>
<thead>
<tr>
<th>Facility</th>
<th>No of Schools that had each facility</th>
<th>%</th>
<th>No of Adequacy</th>
<th>% of Adequacy</th>
<th>% of Inadequacy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assembly hall</td>
<td>13</td>
<td>43.3</td>
<td>3</td>
<td>10</td>
<td>90</td>
</tr>
<tr>
<td>Staffroom</td>
<td>17</td>
<td>56.7</td>
<td>12</td>
<td>40</td>
<td>60</td>
</tr>
<tr>
<td>Classroom</td>
<td>25</td>
<td>83.3</td>
<td>8</td>
<td>26.7</td>
<td>73.4</td>
</tr>
<tr>
<td>Administrative</td>
<td>10</td>
<td>33.3</td>
<td>3</td>
<td>10</td>
<td>90</td>
</tr>
<tr>
<td>Music Studio</td>
<td>5</td>
<td>16.7</td>
<td>-</td>
<td>-</td>
<td>100</td>
</tr>
<tr>
<td>Arts Studio</td>
<td>2</td>
<td>6.7</td>
<td>-</td>
<td>-</td>
<td>100</td>
</tr>
<tr>
<td>Library</td>
<td>6</td>
<td>20</td>
<td>2</td>
<td>6.7</td>
<td>93.3</td>
</tr>
<tr>
<td>Biology lab</td>
<td>8</td>
<td>26.7</td>
<td>3</td>
<td>10</td>
<td>90</td>
</tr>
<tr>
<td>Physics lab</td>
<td>6</td>
<td>20</td>
<td>2</td>
<td>6.7</td>
<td>93.3</td>
</tr>
<tr>
<td>Chemistry lab</td>
<td>8</td>
<td>26.7</td>
<td>2</td>
<td>6.7</td>
<td>93.3</td>
</tr>
<tr>
<td>Intro tech lab</td>
<td>2</td>
<td>6.7</td>
<td>-</td>
<td>-</td>
<td>100</td>
</tr>
<tr>
<td>Home Economics Lab</td>
<td>2</td>
<td>6.7</td>
<td>2</td>
<td>6.7</td>
<td>93.3</td>
</tr>
<tr>
<td>Toilet</td>
<td>5</td>
<td>16.7</td>
<td>2</td>
<td>6.7</td>
<td>93.3</td>
</tr>
</tbody>
</table>

**Source:** Field Study (2008)

### Discussion of Findings

This study was carried out to assess the state of available school buildings to find out whether the policy of getting all children to school is well catered for in respect of adequate building facilities, needed to accommodate students and provide the necessary conducive environment for effective teaching and learning. Table 1 and 2 displayed data computed on the availability and adequacy of school buildings in public secondary schools in Delta State. Figure 1 showed a graphic representation of the available school buildings, while figure 2 revealed the level of adequacy of the school buildings. Thirteen (13) school building facilities were studied from thirty (30) secondary schools, only 13 (43.3%) had assembly halls, out of which only 3 (10%) were considered adequate. According to Yusuf & Olawarotimi (2011) assembly halls are usually a multipurpose hall, where students are gathered for devotional time, and other information passed onto them. It is also used for social activities; the performing arts as well as a community forum. The result of this study shows that the advantage of having an adequate assembly hall is not being accomplished.

Staffrooms were available in only 17 (56.7%) of the schools, and 12 (40%) were adequate. The implication of this is that most teachers are working under some form of stress because of the lack of comfortable staffrooms. Bratte (2006) stated that teachers as an indispensable human resource in the teaching and learning process should be adequately motivated and made comfortable to teach students effectively. But this study revealed that they are not adequately motivated. Again 25 (83.3%) of the schools had classrooms, and only 8 (26.7%) were considered adequate. This was reflected in Ogonor and Sanni (2001), they reported in their study that increase in school enrolment has made available school facilities inadequate. This, of course, could have been responsible for many cases of truancy, students’ restiveness and ineffective implementation of continuous assessment in schools (Ojeje, 2015; Ready & Welner, 2004).
There were 10 (33.3%) schools out of 30 that had administrative buildings, and out of these only 3 (10%) were adequate. Music and art studios were available in 5 (16.7%) and 2 (6.7%) schools respectively and out of these numbers, none of the studios was adequate. None of these practical subjects, therefore, had any practical effect on the students’ learning and mastery of the expected skills. 6 (20%) schools had libraries, but only 2 (6.7%) were adequate. According to Dechaira and Crosbie (2001), the library should be well designed as an instructional resource materials centre which should have a growing amount of knowledge in all fields. But the schools visited had libraries that were not ideal and had little or no relevant stock of books. Even the structures were not adequate. This collaborates Lawanson & Gede, (2011) study on the provision and management of school facilities for the implementation of UBE programme. This situation does have a negative influence on the reading habits of the students.

For the science subjects, Biology, Physics Chemistry, 8 (26.7%), 6 (20%), 8 (26.7%) respectively had laboratories but were combined in one building space. The ones considered adequate were the ones that had separate spaces for each of them which are as follows; Biology 3(10%), Physics 2(6.7%) and Chemistry 2(6.7%). For introductory technology only 2 (6.7%) had it, and none was adequately equipped. Only 5 (16.7%) had toilets, and only 2 (6.7%) were adequate in terms of number and maintenance. The results obtained from the study support the conclusion that most secondary schools in Delta State still lack adequate school buildings in terms of availability and utility, despite the renovation of some public schools in the state by the state government in 2014 (Ojeje, 2015). More renovation, irrespective of location; whether in the urban or rural area should be carried out if the objectives of the national policy on education are to become feasible. Generally, the findings of this study are in line with the studies of (Adeyemi and Adu,2010 & Osuji, 2016), they revealed that physical facilities for the implementation of Universal basic education programme in Ekiti State, Nigeria and in Kaduna State respectively were not adequate. It appears that not much is being done to address the problem of inadequate school facilities since this study demonstrates that inadequate school buildings remain the same in our schools.

Conclusion and Recommendations

The findings of this study support the conclusion that school buildings are available in secondary schools but not adequate. The poor state of school building facility has been a constant issue for school managers and educationists, and this study has also revealed that not much has been done to solve this problem and its adverse effect on the products of the educational system continues unabated. This research provides practical insight into the state of school buildings in Delta State for school managers and policy makers, the government and the society at large to take drastic steps to provide adequate school buildings if the objectives of secondary education programme are to become a reality. The implication of this study is that the provision of school buildings in secondary schools needs to be guided by clear policies to improve on their availability and adequacy. Based on the findings of this study it was recommended that the government should allocate more funds to provide adequate school building facilities in the secondary schools so that students are not overcrowded in classrooms; this will create a comfortable environment for effective teaching and learning. In addition, emphasis should be placed on providing laboratories and studios for the teaching of science subjects, introductory technology and other practical subjects like music, fine arts among others so that learning will not be based on only theory. Furthermore, the allocation of school facilities and type of programmes to be introduced in the schools should be objectively considered before mounting them.
Limitation of the study and implication for future studies

This study encountered some limitations, which includes that the sample is small because of some constraints with logistics and finance. More schools could have been included to give a better generalization of the conclusions of the study. Secondly, the rating scale was one of the instruments used which should have been better analyzed with an inferential statistical data, but only descriptive analysis of data was carried out to make it simpler for stakeholders to understand and take appropriate actions. Thirdly, the study did not cover other factors that can influence the availability and adequacy of school buildings such as management and maintenance strategies of the school administrator. However, Future studies can improve on this study by concentrating on using a larger sample to carry out similar study. A more detailed inferential statistical tool should be employed in data analysis to get a better result. Further studies can be carried out to investigate how the school administrators can adopt effective management and maintenance strategies to enhance the availability and adequacy of school buildings in Delta State, Nigeria.

References


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