

## School Mapping and the Provision of Educational Opportunities in Secondary Schools in Plateau Central Senatorial District

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**Abstract.** The study focused on “school mapping and the provision of educational opportunities in secondary schools in plateau central senatorial district”. Four research questions as well as four hypotheses were raised. A descriptive survey design of the ex-post-facto type was used as the research design. The population for the study comprises of 36,120 school students, 207 principals and 1710 teachers. A self-design questionnaire was formulated as the instrument for data collection while the descriptive method, mean scores and inferential tools of statistics were used to analyze the data that was gathered from the study. Based on the results of the findings, it was revealed that there is no significant relationship between school mapping and the provision of educational opportunities in plateau central senatorial district. It was therefore recommended that government and all other stakeholder in education should ensure that school mapping is strictly employed in the provision and location of school and in the provision of educational resources.

**Keywords:** school mapping, access, quality educational opportunities

### 1. Introduction

Mapping is very essential in provision of educational opportunities and ensuring equity and access to all secondary school students

irrespective of geographical location, social status and race. This is because it brings about universalization of Access, Quality improvements, Equity, Institutional reforms and strengthening of institutions which are key strategies to achieve the target of universalizing secondary education. Over the years, Nigeria has expressed commitment to education with the belief that overcoming illiteracy and ignorance will form a basis for accelerated national development. However, regardless of the incontrovertible evidence that education is crucial to the development of the community and the nation, there remain inequalities in access to education. This is why Teboho (2000) in his assessment of the situation concludes that the entire system reflects privilege and differentiation. The problem of school location, access and equitable distribution of education resources is a major setback to the secondary system in plateau senatorial district of plateau state.

There is also this proof that some school exists with adequate resources and facilities but without students while some have the students but no resources and facilities. School mapping is a normative approach to the micro-planning of school locations. It is an essential planning tool to overcome possibilities of regional inequalities in the provision of educational facilities. It means that it incorporates spatial and demographic dimensions into the educational

planning process it also brings about location of educational facilities depending on the norms and standard prescribed by the authorities. Each student performs differently in any given assessment. Performance differences can be explained by aptitude and student background, but also by the culture of the school the students attend, the location of the school, the nature of facilities available in the school, the number of students in the school and the availability of qualified teachers among others.

In addition, a large proportion of this variation was due to differences in the socio-economic status of the school population, the location of the school and facilities available in the school. The major problem of the study that border the minds of the researcher is that many school mapping tool place without consideration for availability of the population and equal access opportunity for the school aged children in a society. According to Adesina (2007) and Fafunwa (2004), many ordinances, edicts and bye laws were promulgated to improve the state of secondary education in Nigeria. Throughout the period of stewardship of the Colonial Governments in Nigeria, there were few secondary schools to provide secondary education for those that were then willing to acquire it. Despite the shortages in the number of schools available, there is also the believe that they are not equitably distributed in terms of location, resources and population.

Also there is disparity in the allocation of resources, teachers and infrastructural facilities between the rural and urban schools where more resources and staff are redeployed to schools in urban areas while those in the rural areas suffer shortages that is where the school do exists as most schools are located in the urban areas than in the rural area where the school are very scarce and dispersedly located. Are the numbers of school adequate and accessible to all? It is on this note that the study on school mapping and the provision of educational opportunities in secondary schools in Plateau Senatorial zone is embarked upon.

### **1.1 Statement of the Problem**

Despite efforts to expand educational opportunities in Nigeria and in Plateau State, it appears more children cannot still have access to quality education owing to the lack of infrastructure in particular and other school inputs. This has resulted to inefficiencies witnessed in the education sector. More important is the fact that the school system continues to suffer from inefficiency witnessed in the poor location of schools, unequal distribution of human and material resources, inefficient number of schools. The problem here is whether these guidelines on school mapping do exist and if they do, are they fully or partially implemented by the Ministry of Education. It is based on these that the study is carried out.

### **1.2 Objectives of the study**

The main purpose of this study is to find out the relationship between School mapping and the provision of Educational opportunities in Plateau Central Senatorial District.

The study is specifically designed to achieve the following objectives:

- Investigate the extent at which secondary schools mapping enhance even distribution of secondary schools in Plateau Central Senatorial District
- Relate the role of school mapping in the provision of educational opportunities in the area under study

### **1.3 Research Questions**

- In which ways does the secondary schools mapping enhances the equal distribution of secondary schools in Plateau Central Senatorial District?
- To what extent does mapping of secondary schools promote the provision of educational opportunities in the area under study?

### **1.4 Hypotheses**

- To determine the difference between the variables, the following hypotheses will be tested at 0.05 level of significance.

- There is no significant relationship between school mapping and even distribution of secondary schools in Plateau Central Senatorial District.
- There is no significant relationship between school mapping and the provision of educational opportunities in secondary schools in Plateau Central Senatorial District of Plateau State.

### **1.5 Significance of the Study**

The findings may help the Ministry of Education and school administrators in the development of strategies for proper school mapping that will enhance adequate and equitable distribution of educational resources and opportunities to all. To students, it will enable them to understand the importation of school location and the need to have access to education with the necessary resources required. To parents, it will equip them with relevant knowledge on the distance appropriate for their children to travel to school., and to the Administrators and policymakers it will enable them to make laws concerning the distribution of school in the state to ensure that every child have access to quality education.

### **1.6 Scope of the Study**

The study is delimited to the study of school mapping and the provision of educational opportunities in secondary schools with specific reference to central senatorial district of plateau state. Particularly, the study seeks to investigate the relationship between school mapping and the provision of educational opportunities in secondary schools.

### **1.7 Limitation of the Study**

Shortage of fund needed to carry out the research, Time constraint and Difficulty in collecting secondary data from the ministry of education administrators, staffs and students in the various schools

## **2. Literature Review**

The literature will review school mapping and the provision of educational opportunities . concepts reasons for school mapping, factors

influencing school mapping, steps in school mapping, school mapping and the provision of educational opportunities A theoretical and conceptual frame work that school mapping and educational opportunities.

### **2.1 Concept and History of School Mapping**

According to Oke (2011), the historical evolution of school mapping finds its root in France, where a special methodology was developed in 1963 implement the country's major educational reform, extending compulsory education until the age of sixteen. A similar method was used in Nigeria to address some educational issues part of which was the UBE system and newly pronounced establishment of nine Federal Universities in the states where there were no federal Universities.

Many reforms have been introduced in school sector by the Government of Nigeria in which the major attention was given to the management of schools. According to Mathur (2005), management depends on controlling the available resources to achieve the desired target. Even most of the managers are not aware of effective planning or have poor understanding (Sabir and Sadaf 2011).

### **2.2 Concept of School Mapping**

School mapping is a plan for the distribution of school establishments nationwide. The main function of this plan is to ensure an equitable distribution of schools. School mapping is managed or regulated by the Ministry of Education. It is generally understood that these regulations have to be followed both by government and private schools for quality and affordable education to the population living in both rural and urban areas. In effect, when we talk of school mapping, we imply a comparative analysis of the distribution of school establishments in the rural and urban areas (Oke, 2011).

School mapping or school location planning is a plan for the creation and opening of schools which ensures that all areas are provided with educational establishments. UNESCO (2010)

defines school mapping as a set of techniques and procedures used to plan the demand for schools at the local level and to decide on the location of future schools and the means to be allocated at the institutional level. It is evident that the issue of school mapping has to do with making education accessible to especially to remote areas. Therefore, School Mapping involves the process of identifying the communities and places where educational facilities proposed in the PLAN are to be located. It requires systematic effort designed to locate educational facilities in such a manner that targeted age-groups of the population are able to use facilities to their maximum advantage (Kaufman and Herman, 2002).

Singhal, (2004) asserts that School Mapping is the dynamic process of identifying logically and systematically the communities and sites where educational facilities provided in the plan are to be located. Location of schools is a function of school mapping. School mapping is therefore, the process of estimating and diagnosing school requirements and identifying the ideal communities and sites where new schools are to be located and where additional educational resources are to be provided (Gould, 2008).

Oke, (2011) opined that, school mapping is the process of identifying the educational needs of a community through investigation and survey exercise. It is a set of techniques and procedures use to plan the demand for school places at the local level and to decide on the location of future schools and the means to be allocated at the institutional level. It is not only concern with the drawing of maps but deals with school location planning, the distribution of size and spacing of schools, the geographical and space and how resources are distributed depending on size and function. Supporting this, (Al-hanbali et al., 2005), "School mapping is the art and science of building geospatial databases with relational databases of educational, demographic, social and economic information for schools and educational directorates to support educational planners and decision makers."

### **2.3 Reasons for School Mapping**

School mapping incorporates spatial and demographic dimensions into the educational planning process. School mapping technique helps us to identify the most appropriate location of schools or their alternatives so that more number of children can be benefited from the same level of investment. The major objective of school mapping is to create equality of educational opportunities by leveling off of the existing disparities in the distribution of educational facilities. Thus, Usman (2015), opines that school mapping entails a set of techniques and procedures used:

- To plan the demand for schools at the local level;
- To support decision-making on the planning, policy formulation, resource allocation and prioritization of future school development.

Gould, (2008), asserts the main purpose of school mapping is to set up a school network which will meet the future demand for education. In the context of Nigerian educational system, the essential functions of school mapping is to help, realize the target set by the National Policy on Education.

### **2.4 Mapping Exercise as a Tool for Planning Educational Development**

Over a period of time it is noticed that certain areas are more endowed with school facilities than other areas. School mapping is an essential planning tool to overcome possibilities of regional inequities arising from the investment policies of the public authorities. School mapping is an important technique to arrive at rational decision regarding distribution of educational facilities across different geographical locations; the term "school mapping" seemingly implies that the exercise is confirmed the locations of schools and distribution of school facilities (Nwagu, 2009). Rational allocation of educational facilities to benefit relatively large number of children from the same amount of investment. Therefore, it is a necessary step to promote development of education, the knowledge of school mapping and its planning approach focuses on the local level, provides an analytical framework for the

implementation of education plans. They offer methods and techniques to estimate future needs and to identify ways to meet them.

The United Nations Human Rights Declaration Article twenty-six (26), regards education as a right rather than a privilege. However, the constitution of the Federal Republic of Nigeria (2004) also declared education as a right to all citizens of the country.

It is expected that educational system will produce the quality and quantity of human resources required for the economy's growth using the right mix inputs. Ibukun (2009) affirmed that no nation or society can rise above the quality of her education. The immeasurable contribution of education in the development process has left a burning desire in every government to increase access to education for all her citizens and this can be achieved through school mapping, that is when all that is required to have an effective learning (both human and material resources) are put in place. In line with the above assertion, (Ibukun, 2003; Brock, 2006) opined that investigation in basic education and training is an ingredients to human capacity building such capacity, they noted is the foundation needed to realize increased productivity, most importantly technological innovation. The direction of education toward national economic growth and development was an important basic for the introduction of Universal Basic Education (U.B.E) programme. Hence education opportunities and their expansion provide the base for national economic development, Individual economic welfare and also narrows social inequalities by promoting a meritocratic basic for status attainment in which the talented can rise to appropriate position in the economy regardless of social background (Hunnum and Buchmann, 2005).

## **2.5 Factors Influencing School Mapping**

Oke, (2011), asserted that, it has to be recognized at the outside that getting all children in Nigeria, most of who will be first generation learners to attend secondary education is undoubtedly an arduous task that cannot be

achieved quickly. Each village will take a fairly long period of time to transform itself from the state of predominantly illiterate society to a state where all people, at least the young ones, have completed secondary education.

Oluchukwu, (2008), identify certain norms and standards in the process of school mapping that harness the use of teachers and facilities which are imperative in drawing up school map. These factors are;

### **2.5.1 The Demographic Factor:**

Demographic factors pertain to such characteristics of population as size, growth, density, social structure, migratory trends, school drop-outs and retention rates, etc. Denis (2012), opines that schools should accommodate all children regardless of their physical, intellectual, social, linguistic or other social conditions. This should include disabled and gifted children, street and working children, children from remote or nomadic populations, children from linguistic, ethnic, or cultural minorities and children from other disadvantaged or marginalized areas and groups (Miles and Singal 2010: quoting UNESCO).

### **2.5.2 The Pedagogic Factors:**

We consider quite a number of parameters such as the normal period of utilization of school site, weekly timetable (staff and students) and breakdown by subjects, teacher's level of specialization; the possibility of double shifts for pupils; different types of final examinations, vocational and technical training courses etc.

An attempt has to be made to fix the optimum size of school at each level of the system, this being the size which affords at the same time the best possibilities for management and administrative control for the human character for the school and the full utilization of staff and facilities.

### **2.5.3 The Geographical Factor:**

This entails looking into the possibilities of children to get to school on foot or by personal means of transport (distance involved, existence of roads and any obstacles). This has to do with

the concept of catchment area. Hallark (2007), prescribed that the maximum acceptable time taken in getting to schools is in the neighborhood of forty five minutes for primary school children in any country. However, Fabiyi (2015) sees Geographical Factors as the first step in school mapping is the diagnosis of the present institutional network in the area under consideration.

#### **2.5.4 The Economic Factor:**

According to Fabiyi, (2015), Social-economic factors include the social class structure, the rural-urban distribution of the population, and the general economic situations and prospects. This involve looking into the lowest financial cost after a decision of optimum size has been taken and lead to cutting out schools that are under-utilized, schools with high percentage of boarders etc.

#### **2.5.5 The Political Factors:**

Political factors cover those political and policy priorities and constraints, which usually, dictate the creation or expansion of specific types of educational institutions. Manpower factors refer to the present and future structures of employment which generally affect the relative weights in educational contents and diversification (Denis 2012).

#### **2.6 Steps in the School-Mapping**

Oluchukwu (2008), asserted that the first step in school mapping is diagnosis of the present institutional network in the area under consideration. This will uncover any weakness and thus help us to re-design and rationalize it in carrying out the diagnosis a number of assessment are used, Viz;

- (i) Does the existing institutional network meet the demand for education in the area.
- (ii) Is the existing institutional network economical?
- (iii) Is the existing institutional network of sufficient quality and quantity?
- (iv) Is the existing institutional network available?

Basically diagnosis in school mapping has two areas of concern in the school system. These are intra-educational diagnosis that is those areas of concern that are within the school system. Students flow, education stock taking, internal efficiency, cost, issue of quality and quantity etc; and those that are outside the school system that is extra-educational diagnosis e.g demographic factors and socio-economic factors.

#### **2.7 School Mapping and Provision of Educational Opportunities**

With respect to school mapping and provision of educational opportunities, Nigeria has made significant progress by making available secondary school within distance of about 3km for almost 80 percent of its children. The numbers of schools has increased rapidly during the last three decades and the number of teachers accordingly. Yet it is paradoxical that output indicators such as literacy rate and participation of children in schooling are disastrously low in some part of the country. To attain equity in education is one of the objectives of school mapping that need to be achieved. Equity here means equality. It implies equal chances, equal treatment and equal gains (Obanya, 2009). Access means universal provision of secondary schools and universal enrolment of children in the age group of 14 to 18 groups (UNESCE, 2009). All children in the age group of 14 to 18 should have access to secondary schools within the distance of 3 kilometres. There should not be any discrimination on grounds of sex, religion, caste, place, or socio economic status.

This is why Teboho, (2000) in his assessment of the situation concludes that the entire system reflects privilege and differentiation. On the contrary, school mapping is aimed at ensuring equity and quality; that is the degree to which education is acquired by an individual. This implies the ability or degree with which an educational system conforms to the established standard and appropriateness of the inputs available for the delivery of the system (Enaigbe and Osagie 2011).

Based on the above, it can be deduced that educational opportunities were not evenly

distributed before now. The introduction of school mapping has gone a long way in curtailing such disparities, it has made a U-turn and have produced great changes in the provision of educational opportunities in the country even though there is more to be done. This has brought a lot of improvements in the provision of education opportunities to all as those children who find access to school difficult now have access to education since school mapping has ensured the reduction in distance of catchment areas (Denis 2012). Also, School Mapping involves the process of identifying the communities and places where educational facilities proposed in the PLAN are to be located. It requires systematic effort designed to locate educational facilities in such a manner that targeted age-groups of the population are able to use facilities to their maximum advantage (Kaufman, and Herman, 2002).

## 2.8 Theoretical Framework

Central Place Theory (CPT) is an attempt to explain the spatial arrangement, size, and number of settlements. The theory was originally published in 1933 by a German geographer Walter Christaller who studied the settlement patterns in southern Germany. In the flat landscape of southern Germany Christaller noticed that towns of a certain size were roughly equidistant. By examining and defining the functions of the settlement structure and the size of the hinterland he found it possible to model the pattern of settlement locations using geometric shapes.

Christaller made a number of assumptions such as:

All areas have

- An isotropic (all flat) surface, an evenly distributed population, evenly distributed resources
- similar purchasing power of all consumers and consumers will patronize nearest market, transportation costs equal in all directions and proportional to distance, no excess profits (Perfect competition)

## 4. Data Analysis

The theory consists of **two basic concepts**:

- Threshold - the minimum population that is required to bring about the provision of certain goods or services
- Range of goods or services - the average maximum distance people will travel to purchase goods and services.

The implication of this theory is that people will like to patronize places that are nearest to them and that location of schools should be determined by distance and the population that requires the services in order to ensure, equity, quality and accessibility of educational opportunities.

## 3. Research Method and Procedures

### 3.1 Research Design

The research was a descriptive survey design of the ex-post facto type.

### 3.2 Population and Sample Size

Thus the whole secondary school in plateau central senatorial zone of plateau state amounting to 207 from the five LGA's. The population for the study comprises of 36,120 school students, 207 principals and 1710 teachers.

### 3.3 Sampling Technique

The simple random sampling technique was used in selecting plateau central senatorial district and the 12 schools within the district. The same simple random sampling was used to select 600 students out of the 36120 students and 60 teachers out of 1282 teachers in the schools while a purposive sampling was used to select all the principals.

### 3.4 Data Collection

The instrument for Data collection was a self-design questionnaire formulated by researcher known as the School mapping and Educational Opportunity Questionnaire (SMAEQ).

The data was analyzed using descriptive statistics with the aid of statistical package for social science (SPSS) version 17.0, while the Pearson product moment was used in testing the hypotheses.

**Table 2: School Mapping Enhances The Equal Distribution Of Secondary Schools.**

s/no	Items	SA	A	D	SD	Mean	Decision point	
	Schools in the rural communities are adequate to the number of students	110	120	247	193	2.22	Disagreed	
	Schools are located where every Student can have access to it	146	134	209	177	2.37	Disagreed	
	Many students drop out of school due to location of school in their community		218	187	186	78	2.81	Agreed
	There is equal accessibility to secondary Education in plateau central zone	127	102	260	181	2.26	Disagreed	
	Every community has secondary school within their environment	202	135	206	127	2.61	Agreed	

as shown in the table above, 3 of the research question were agreed and the overall means response was 2.54 representing 63.5%, this implies that school mapping enhances equal distribution of schools and facilities it has also enhances student enrolment in school even though there is no full implementation of the school mapping process but it has gone a long in enhancing the distribution of resources and facilities in secondary schools.

**Table 3: Mapping of Schools Promote Educational Opportunities**

S/no	ITEMS	SA	A	D	SD	Mean	Decision point			
	School mapping exercise help to increase the provision of schools in the community				203	204	191	71	2.81	Agreed
	School mapping system has made every community to have equal access to educational opportunities	169	152	222	127	2.54	Agreed			
	The supply of educational resources to our school have improve through mapping system	227	135	171	137	2.67	Agreed			
	There is required recreational facilities in all secondary schools in plateau central zone.		133	95	245	197	2.24	Disagreed		
	Every child with academic potential is adequately reach through school mapping exercise	284	91	161	134	2.78	Agreed			

As indicated in table 2 that out of the five question, 4 were accepted with the overall mean response of 2.61 representing 65.3% based on the decision point of 2.50 it was agreed that school mapping will promote the provision of educational opportunities hence, policy makers and education planners should put much priorities on school mapping so as to ensure quality and access to education.

**Testing of Hypotheses**

**Hypothesis 1:** There is no significant relationship between school mapping and educational opportunities in secondary school in plateau central senatorial district.

**Correlation Coefficient on the Significant Relationship between School Mapping and Educational Opportunities**

	Correlation
Pearson Correlation	.690
Sig. (2-tailed)	.197
N	5

Based on the correlation coefficient of 0.690, the hypothesis was accepted since the p-value of 0.197 was greater than the 0.05 significance level. Therefore, it was concluded that there is no significant relationship between the school mapping and educational opportunities in secondary school in plateau central senatorial district.

**Hypothesis 2:** There is no significant relationship between school mapping and equitable distribution of secondary schools in plateau central senatorial district.

**Correlation result on the significant relationship between school mapping and equitable distribution of secondary schools**

Correlation	Coefficient
Pearson Correlation	.673
Sig. (2-tailed)	.143
N	6

Based on the above, a correlation coefficient of 0.673 was obtained and the hypothesis was accepted since the p-value of 0.143 was greater than the 0.05 significance level. It was concluded that there is no significant relationship between the school mapping and equitable distribution of secondary schools in plateau central senatorial district.

**5. Conclusion and Recommendations**

From the findings of the study, it was indicated that school mapping is not properly used in the provision of schools, distribution of facilities and the provision of educational facilities

Below are the findings of the study:

- School mapping if properly done will enhance student’s enrolment in school as many students will have access to education.
- School mapping exercise is not used in the provision of schools

- Schools are not equally distributed as some parts have lesser number of schools than required while in other part, there is excess. It was therefore recommended that utmost concretizations and attention should be placed on school mapping and that its facilities so as to create a conducive atmosphere that will enhance effective administration and defined academic activities.

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