



SCHOOL MAPPING AS THE DETERMINANT OF THE PROVISION OF EDUCATION RESOURCES IN PUBLIC SECONDARY SCHOOLS

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Abstract:

In this study, the researcher investigated school mapping as a determinant for the provision of education resources in public secondary schools in Imo State. Three research questions and three hypotheses guided the study. The instrument used to collect data from the respondents was "School Mapping as a Determinant for the Provision of Education Resources in Public Secondary Schools in Imo State Questionnaire (SMDPERPSSISQ)". The instrument was validated by three experts. The reliability of the SMDPERPSSISQ was established through a pilot testing and analysis using Cronbach alpha which yielded an average of 0.84 considered high enough for the study. Pearson Product Moment Correlation Coefficients were used to answer the research questions and test the hypotheses. In testing the null hypotheses, when p-value is equal or greater than 0.05 level of significance, the null hypothesis is accepted, but if it is otherwise, the null hypothesis is rejected. The finding of the study, among others is that most of the schools in the study area are concentrated in the urban areas with few of them are cited in the rural areas. It was therefore recommended that more schools should be located at the rural communities to provide education opportunities for children of school age in the rural area.

Keywords: school mapping, education resources, public secondary schools

1. Introduction

School mapping is concerned with the provision of education opportunities with the intention to reduce the gap in the establishment of schools in every state or community. It is the process of obtaining and analysing data and using them to make decisions and

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projections on places to locate schools. The essence according to Adaja and Osagie (2015) is to make for equity or equality in the provision of education resources.

It is also the process of determining future expansion of education resources in terms of human, physical and financial resources. School mapping is an important or strategic effort aimed at creating fairness in investment policies of education managers in their desire to give people equal chances of education (Edumark, 2013). In a very simple language, it is the location of schools in areas or places where education will be easily accessible to the public, in order to avoid or minimize disparity.

Beyond this, school mapping in an extended meaning consists of actions taking by government to provide education resources to schools and places where they are used (Akpan, 2011). Education resources are material resources that are used to make teaching and learning feasible. They include but not limited to school building, science equipment in the laboratories, book and non-book materials needed both in the library and in the class for consultation and lesson.

The need to develop school plant or infrastructure cannot be overemphasized. Manga and Nakazalle (2015) stated that the availability or otherwise of school infrastructure can make or destroy the realization of education objectives. According to them, staff and student cannot operate well in a school environment where school plant is either inadequate or not even available. Oyebade (2009) explains school mapping as the process of planning for education and its implementation at the micro and macro levels. Micro level stands for districts or local government areas while macro level represents state-wide planning for the location of education resources. It is also concerned with deciding the quality of teachers to be recruited and posted to schools to teach or handle some specific subjects especially in the sciences (Edumark, 2013).

As stated earlier, school mapping falls within the purview of education planners or authorities and the exercise could be recurrent. This is because school enrolment has always been on the increase due to the surge in population (Oyebade, 2009). The rural areas are replete with population of people that is always on the rise. This increase in the number of school age children cannot be left uneducated. Schools therefore have to be set up in those places to accommodate the rising population (Sabir, 2013).

In most cases, the rural communities are far from the cities where there is concentration of schools. A situation like this creates difficulty for school age children to access education from schools in the cities especially with the attendant bad roads. Citing schools in their various localities close to them explains one of the reasons for school mapping (Yusuf and Akiuriranye, 2011). There is ease and safety when children go to school from home. They are under the care and supervision of their parents.

School mapping makes for cost effectiveness in the provision of education resources. Adaja and Osagie (2015) are of the opinion that it is cheaper for parents to access education for their children if schools are located closer to them in their rural areas. On the part of government, it is more economical and purposeful to establish schools in the local areas. At least, it reduces rural-urban migration and on another note, it helps to boost the economy of the rural areas. This is because small and medium business units

are set up to take care of the teachers posted to the schools and even the students in the hostels (Oyewobi, 2001).

One of the cardinal objectives of the Universal Basic Education is to provide education opportunity for every Nigerian child of school age (FGN, 2004). School mapping is one veritable means of realizing this national goal. It also gives government the opportunity of making full use of the pool of human resources trained and prepared to take up gainful employment. School mapping equally helps government to look at educational backward societies with a view to not just setting up schools in their areas but increase enrolment (Ifebuzor, Nkemakolam and Akintoye, 2015).

Sparely populated areas may as well need schools to be cited for them. These are populations that live apart from each other like the Northern part of Nigeria. If such areas are left on catered for educationally, they live and wallow in ignorance. Children in these areas grow to become problems to the society. They become vulnerable to disaster and sometimes constitute security threats to the nation (Edumark, 2013).

Some areas however could be rural but densely populated even with small landmass. Such areas naturally breed large number of school age children. School mapping can assist government provide for the educational needs of such localities. To help government ensure adequate education opportunity for such rural but densely populated area, there should be the provision of adequate data and statistics of the ages and concentration of the population per kilometre (Sabir, 2013). One major challenge of school mapping is political consideration especially when the area or population that needs the school is at variance with the political party in government. Nevertheless, it is important to state that school mapping helps government to ensure that global standards are adopted and maintained to satisfy peculiar aspirations of each region or zone.

2. Statement of the Problem

School mapping is the dynamic process of identifying logically and systematically, the areas and communities where education resources are to be located. Its purpose is to provide what the society needs to get people educated. It has its own process of investigation and makes available the inventory of already existing educational resources and by that means shows institutional facilities that are under or over utilised. Where the Universal Basic Education is put into consideration, school mapping takes note of the organization of a school network takes care of the geographical distribution of the population.

However, in Imo State, the way and manner schools are located is worrisome. Majority of the 320 secondary schools in the study area are located at the urban areas leaving the densely populated local or rural areas without adequate educational facilities. It is against this background that this study is devoted to investigate school mapping as a determinant of the provision of educational facilities in Imo state, Nigeria.

2.1 Purpose of the Study

The study examined the relationship between school mapping and the provision of education facilities in Imo state. Specifically, the study investigated;

- 1) How school mapping enhances the provision of science equipment in secondary school laboratories in Imo State.
- 2) The influence of school mapping on the provision of book and non-book materials in secondary school libraries in Imo State.
- 3) How school mapping enhances the provision of education resources to rural areas in Imo State.

2.2 Research Questions

The study was guided by the following research questions;

- 1) How does school mapping influence the provision of science equipment in secondary school laboratories in Imo State?
- 2) How does school mapping influence the provision of book and non-book materials in secondary school libraries in Imo State?
- 3) In what ways do school mapping help in the provision of education resources to rural areas in Imo State?

2.3 Hypothesis

The following hypotheses were tested at 0.05 level of significance:

- 1) There is no significant relationship between school mapping and the provision of science equipment in secondary school laboratories in Imo State.
- 2) There is no significant relationship between school mapping and the provision of book and non-book materials in secondary school libraries in Imo State.
- 3) There is no significant relationship between school mapping and the provision of education resources to rural areas in Imo State.

3. Method

The study investigated school mapping as determinant of the provision of education resources in Imo State, Nigeria. Three research questions and three hypotheses guided the study. The population consist of the principals of the 230 secondary schools in the study area and 162 principals were randomly chosen as the sample size of the study. The instrument used for data collection was a 17-item questionnaire titled "School Mapping as a Determinant of the Provision of Education Resources in Public Secondary Schools in Imo State Questionnaire (SMDPERPSSISQ)". The instrument was validated by three experts. The reliability of the instrument was established by a pilot study and testing using Cronbach alpha and it yielded an average of 0.84 which was considered high enough for the study. The instrument was divided into three sections. Section A dealt with the provision of science equipment in the school laboratories, section B was concerned with the provision of book and non-book materials in school libraries while

section C was about the provision of education facilities. For the purpose of analysis, each of the item was scored. The four points rating scale was used in rating the responses of the respondents' responses. Each item was weighted and calculated as: Strongly Agreed (SA) = 4points, Agreed (A) = 3points, Disagree (D) = 2points and Strongly Disagree (SD) = 1point. Mean and standard deviation were used to answer research questions while Pearson Product Moment Correlation Coefficient was used to test the hypotheses. The null hypotheses were tested at 0.05 significant level by computed correlation index for decision making. In testing the hypothesis, when P-value is less than 0.05 (< 0.05), the null hypothesis was rejected, where it is otherwise, it is accepted.

4. Results

Research Question 1: How does school mapping influence the provision of science equipment in secondary school laboratories in Imo State?

Table 1: Respondents' mean ratings and standard deviation on influence of school mapping on provision of science equipment (n = 156)

S/N	Questionnaire Items	\bar{X}	SD	Remarks
1	School mapping makes for the provision of science laboratory equipment in schools.	2.86	0.89	Agree
2	School mapping makes for the provision of science laboratory supplies.	2.82	0.75	Agree
3	It helps students to use science equipment in the school laboratories.	3.62	0.88	Strongly Agree
4	It makes science students to conduct their practical easily.	2.86	0.91	Agree
5	School mapping helps to enhance science students' knowledge of science subjects.	3.00	0.67	Agree
6	It makes science students to avoid hazards during science practical.	2.65	0.65	Agree
7	School mapping makes for the provision of modern ICT technologies for science practicals.	3.41	0.49	Agree
8	It will produce inventory of available science equipment in schools.	3.68	0.87	Strongly Agree
9	It will show which of the science equipment are utilized or underutilized.	3.00	0.88	Agree
	Grand mean	3.10		Agree

Data in Table 1 reveal that out of 9 items listed on how school mapping influence the provision of science equipment, school principals rated items 3 and 8 strongly agree with mean scores ranging between 3.62 and 3.68 while they rated the remaining six items agree with mean scores ranging between 2.65 and 3.41. The grand mean scores of 3.10 shows that on the whole, school principals agree that school mapping have an influence on the provision of science equipment in secondary school laboratories in Imo State. Standard deviation ranges between 0.49 and 0.91 indicating that the respondents are not wide apart in the mean ratings.

Research Question 2; How does school mapping influence the provision of book and non-book materials in secondary school libraries in Imo State?

Table 2: Respondents’ mean ratings and standard deviation on influence of school mapping on provision of book and non-book materials in secondary school libraries (n = 156)

S/N	Questionnaire items	\bar{X}	SD	Remarks
10	School mapping helps in the provision of book in the school library.	3.04	0.87	Agree
11	It facilitates the provision of audio-visual materials in the school library.	2.86	0.76	Agree
12	It provides students with journal and serials used for research.	3.74	0.71	Strongly Agree
13	The library materials make for the availability of resource materials for teachers.	2.57	0.61	Agree
	Grand mean	3.05		Agree

Data in Table 2 shows that out of 4 items listed on how school mapping influence the provision of book and non-book materials, school principals strongly agree that school mapping provides students with journal and series used for research while they agree on the remaining three items (items 10, 11 and 13) with mean scores ranged between 2.57 and 3.04. The grand mean scores of 3.05 shows that on the whole, school principals agree that school mapping influence the provision of book and non-book materials in secondary school libraries in Imo State. Standard deviation ranges between 0.61 and 0.87 indicating that the respondents are not wide apart in the mean ratings.

Research Question 3: In what ways do school mapping help in the provision of education resources to rural areas in Imo State?

Table 3: Respondents’ mean ratings and standard deviation of how school mapping help in the provision of education resources (n = 156)

S/N	Questionnaire items	\bar{X}	SD	Remark
14	School mapping helps to provide teaching and learning in the rural areas of the state.	3.18	0.71	Agree
15	It gives children of school age the opportunity of going to school from their homes.	2.64	0.66	Agree
16	It gives parents the opportunity of monitoring their children as they go to school from their homes.	3.81	0.59	Strongly Agree
17	School mapping makes education cost effective for both the government and parents.	3.02	0.81	Agree
	Grand Mean	3.16		Agree

Data in Table 3 shows that out of 4 items listed respondents strongly agree on item 16 with mean score of 3.81 while they agree on the remaining three items with mean scores ranged between 2.64 and 3.18. The grand mean scores of 3.16 shows that on the whole, school principals agree that school mapping helps in the provision of education resources

to rural areas in Imo State. Standard deviation ranges between 0.59 and 0.81 indicating that the respondents are not wide apart in the mean ratings.

Hypothesis 1: There is no significant relationship between school mapping and the provision of science equipment in secondary school laboratories in Imo State.

Table 4: Correlation coefficient of the relationship between school mapping and provision of science equipment

		Provision of science equipment
School mapping	Pearson Correlation(<i>r</i>)	.785
	Sig. (2-tailed)	.000
	N	156

The correlational analysis on school mapping and provision of science equipment as presented on Table 4, ($r_{(156)} = .785$; $p = .000$), shows a significant relationship between school mapping and provision of science equipment in secondary school laboratories in Imo State, since p-value of .000 is lesser than 0.05. Therefore, the null hypothesis is rejected.

Hypothesis 2: There is no significant relationship between school mapping and the provision of book and non-book materials in secondary school libraries in Imo State.

Table 5: Correlation coefficient on the significant relationship between school mapping and provision of book and non book materials

		Provision of book and non-book materials
School mapping	Pearson Correlation(<i>r</i>)	.690
	Sig. (2-tailed)	.014
	N	156

The correlational analysis on school mapping and provision of book and non-book materials as presented on Table 5, ($r_{(156)} = .690$; $p = .014$), shows a significant relationship between school mapping and provision of book and non-book materials in secondary school libraries in Imo State, since p-value of .014 is lesser than 0.05. Therefore, the null hypothesis is rejected.

Hypothesis 3: There is no significant relationship between school mapping and the provision of education resources to rural areas in Imo State.

Table 6: Correlation Coefficient on the Significant Relationship between School Mapping and Provision of Education Resources

		Provision of education resources
School mapping	Pearson Correlation(<i>r</i>)	.815
	Sig. (2-tailed)	.003
	N	156

The correlational analysis on school mapping and provision of education resources as presented on Table 6, ($r_{(156)} = .815$; $p = .003$), shows a significant relationship between school mapping and provision of education resources to rural areas in Imo State, since p-value of .003 is lesser than 0.05. Therefore, the null hypothesis is rejected.

5. Discussion

The findings of the study as shown in Table 1 explained that there is a significant relationship between school mapping and the provision of science equipment in schools. The responses were all agreed that school mapping has been a veritable instrument to ensure that science equipment would be made available in public secondary schools.

Another finding of the study indicated in Table 2 is that there is a high and positive relationship between school mapping and the provision of book and non-book materials to school libraries. School mapping involves the process of taking stock of what is available and identifying what is not available in order to supply them. Through responses from the respondents showed that school mapping facilitates the provision of learning facilities are provided in the school libraries. These facilitates are book covering the various subjects offered in the school and non-book materials like audio and audio-visual materials that are needed by both staff and students to enhance registrar.

One other finding of the study as indicated in Table 3 is that there is a significant relationship between school mapping and the provision of education resources in schools. Beyond science equipment and library facilities there are many other education resources that help to facilitate learning. These are plants, furniture for both staff and students and other instructional or resource materials that make learning possible. School mapping addresses this to make sure that pedagogy and general school climate favour learning process.

6. Conclusion

From the findings of the study, it could be understood that there is a positive and significant relationship between school mapping and the provision of education resources. School mapping as it were, is a periodic engagement of education authorities and planners to take inventory of school plants and other facilities that ventilate learning. In most cases, it is capital (money) intensive and as such government and education

authorities should deliberately work to ensure that the purpose, which is to make available learning facilities in school is achieved.

6.1 Recommendation

In view of the above findings, the following recommendations are made;

- 1) Government and education authorities should embark on school mapping at the end of every academic session in order to replace education facilities that are subject to wear and tear of use.
- 2) School authorities should develop maintenance culture. Most learning facilities break down and become unusable due to lack of care.
- 3) Government should also recruit and post specialised and competent teachers who have the technical – knowhow to use the science equipment correctly during teaching. Sometimes inexperience teachers engaged to handle science equipment break them through wrong use.
- 4) Seminars and workshop should be periodically, organised for teachers to update their knowledge and use of learning facilities that are becoming sophisticated with new production.

Conflict of Interest Statement

The authors declare no conflicts of interests.

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