

**MANAGEMENT OF PHYSICAL RESOURCES FOR ACADEMIC
IMPROVEMENT OF JUNIOR SECONDARY SCHOOL STUDENTS IN
RIVERS STATE, NIGERIA**

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Abstract

The research investigated management of physical resources and academic improvement of Junior Secondary School Students in Rivers State. The descriptive survey design was adopted, with a population of 36,957 students from all the Junior Secondary Schools in Rivers State. Multistage sampling and stratified random sampling techniques were used to achieve initial and final sample sizes of 3940 and 394 students selected from six Local Government Education Authorities. The instrument used to elicit responses was a self-structured questionnaire titled, "Management of Physical Resources for Academic Improvement of Students in Junior Secondary Schools Questionnaire" validated by three experts in the Departments of Educational Management and Measurement and Evaluation. The reliability coefficients of 0.71 and 0.72 were obtained using the Cronbach Alpha reliability scale indicating a high reliability of the instrument. The research questions posed were answered using mean and standard deviation, while the hypotheses were tested using z-test. Findings of the study revealed that classrooms are not adequately provided in public junior secondary schools and public junior secondary schools students rarely utilize the libraries due to inadequate library resources. The researchers recommended that, the government should construct additional classroom blocks in all Junior Secondary Schools to enhance effective teaching and learning processes and also, the government should in collaboration with other stakeholders procure and equip the libraries in public Junior Secondary Schools with

essential library resources in order to encourage reading culture amongst students.

Keywords: Management, Physical Resources, Academic Performance, Junior Secondary School, Students

Introduction

Prioritization of education in every State is said to be a veritable tool for the development of such States. This could be summed up by the evident inputs of the educated minds in relation to the development of science and technology, improvement of individuals and families through socio-political and economic structures and in general, making the society a beautiful place of habitation. Education is aimed at bringing about the expected behavioural change in learners through critical and creative thinking, collaboration, problem solving, acquisition of skills and competencies. For these aims of education to be actualized, appropriate management of the physical resources is highly required. Management of physical resources include planning, procurement and provision in the right quantities and quality, supervision, auditing and maintenance of such facilities (Amie-Ogan, 2020).

In a nutshell, physical resources refer to all facilities which are used in educating and motivating students to learn. They encompass classrooms, laboratories, libraries, technical workshops, assembly halls, recreational ground, botanical and zoological gadgets, farm land, projectors, chalkboards, whiteboards, interactive or smart boards, computers, staff offices, toilet facilities etcetera. They are used in the teaching-learning process to implement the curriculum so effectively as to achieve educational objectives. Therefore, effective and efficient learning could be said to have actually taken place when the physical resources which are believed to aid the teaching – learning process are made available in schools in the right quantity and quality. According to Ezeocha (2011), inadequate physical resources can lead to undesirable personal behaviours and that a large group of activities such as sports and games, drama, etcetera cannot be conducted effectively without adequate physical space and equipment.

From the foregoing, adequate provision of physical resources can be said to facilitate and stimulate learners as students tend to develop positive interest in learning which will invariably lead to high academic improvement. Since this is the reality, the status of physical resources which are not always procured and supplied in the right quantities at all levels of education in general and the junior secondary schools in particular should be something of a great concern to the government. In most junior secondary schools in Rivers State, Nigeria; especially in schools with high number of

students' enrollment, the classrooms are overcrowded. Government on her part tend to ignore the Policy on Education Federal Republic of Nigeria (2014) which categorically stipulated teacher-student ratio of 1 is to 35 for junior secondary schools' class size. Inadequate planning occasioned by the social demand approach to education, which is practiced in Rivers State has led to population explosion in our educational system. In agreement, Agabi (2014) averred that, inadequate accommodation, experience of high pupil-teachers' ratio with figures in the neighborhood of 120 per class are common in places like Nigeria, Ouagadougou, and most parts of Latin America. This connotes that, classrooms are over utilized and over stretched in usage and by extension failed to achieve the goal for which they were provided for. An overcrowded classroom, is without proper ventilation, temperature and lighting. These elements can bring about discomfort and irritation which affects students' behavior and deters learning thereby leading to poor academic performance in subjects taught in schools. Learning in an overcrowded classroom compounds effective teaching and learning and impairs movement of both the teachers and students and makes it impossible for the teacher to achieve individualized attention of the students.

Findings of many research works had always linked high academic improvement of students to adequate supply of physical resources. Amie-Ogan (2020) opined that, physical resources are correlates of success of psychomotor, affective and cognitive domains in institutions of learning. This implies that, academic improvement cannot be in a vacuum. It can only be achieved when the resources are properly planned for, adequately procured and provided, supervised, optimally utilized, maintained and audited. Buttressing the significance of physical resources in students' academic improvement, Oluchuku (2010) opined that unless schools are well sited, buildings adequately constructed and equipment adequately utilized and maintained, much teaching and learning may not take place. This indicates that, inadequate management of physical resources in schools will end up ridiculing the efforts teachers make in class in order to ensure effective teaching and learning contributes to high academic improvement.

The onus of effective management of physical resources falls under the purview of the school administrators as well as the Heads of Departments and teachers, when delegated to do so by the school administrators. The school administrators ensure that physical resources are appropriately utilized to effectively achieve learning in schools through regular supervision. Supervision, takes cognizance of all the happenings in schools and the state of all resources. Irregular supervision leads to administrators' inability to detect where schools are lagging behind and make informed recommendation for accurate data of physical resources to be supplied,

repaired or replaced. Studies of different scholars have shown that most junior secondary school buildings are dilapidated and in sorry state, the libraries are ill equipped with obsolete textbooks, laboratories lack basic equipment for practicals, students sit on broken chairs or bare floor, technical workshops and recreational centers are built close to the classroom due to wrong mapping and planning etcetera. These abnormalities could be as a result of the need to manage physical resources for academic improvement of junior secondary schools in Rivers State.

Concept of Physical Resources

Scholars have different definitions of physical resources based on their diverse perspectives but no definition is more acceptable than the other as all the definitions add to existing knowledge of the concept of physical resources. Obanya (2010), viewed physical resources as didactic materials such as books, charts and computers which are supposed to make learning and teaching possible. Isola (2010), referred to physical resources as objects or devices such as learners' books, teachers' guides and chart which help the educator to make a lesson much clearer to the learner. According to Adeofun and Osifilia (2010), physical resources include laboratories, libraries, classrooms and a host of other physical infrastructure. Also, Ajayi (2012) maintained that, physical resources comprise the machinery which in turn include machines and tools used in the workshop, in addition to duplicating machines. They also included buildings, equipment, furniture, vehicles of various types, electrical fittings, books, water supply infrastructure, and accessories like playgrounds, lawns, parks and farm, as part of physical resources. Agabi (2014) said that, physical resources form the hardware through which the educational curriculum which is software is transmitted to the group being educated.

Physical resources refer to the school plant, that is, the school buildings, classrooms, library, laboratories, toilet facilities, offices and other materials and infrastructures that would likely motivate students towards learning. Physical resources are the raw materials which are used to achieve an objective or goal in an organization. They are resources that we can feel, move, see, and manipulate at will to achieve predetermined educational goals.

Provision of classrooms and student academic improvement

Provision of classrooms in the right quantity and quality enhances teaching and learning which in turn improves the academic performance of students. When classrooms are inadequate there is high possibility that the available classrooms would be overcrowded and become a place of discomfort for both the teachers, students and the teaching-learning process. This implies that, an overcrowded classroom is short of all the factors which provide comfort to teachers and learners, rather it impedes effective teaching and learning. On the

contrary good classroom conditions in school tend to have positive impact on students' academic achievement. According to Keller (2013), it is difficult to separate high academic improvement from classroom environment; as ambient classroom environment promotes positive behavior and attitude of students. O'Neil (2010) also stressed that classroom factors such as temperature, ventilation, lighting, colour and noise level produce comfort or irritation, either of which can positively or negatively affect behavior of school students and affect learning outcome. In corroboration, Lackney (2012) found out that students in classrooms without adequate ventilation had more negative attitudes than students exposed to natural light. This is because poor ventilation deoxygenates the classroom, thereby causing more discomfort to students who are at that age full of zeal to explore the world. A study by Eshiwani (2012), pointed out that schools that had the best physical resources like classrooms were among the high achieving schools and that those that had inadequate classrooms performed poorly in certificate examinations. The study concluded that the presence or absence of spacious classrooms distinguished between high achieving and low achieving schools. Nguru (2016) observed that sitting positions in crowded classes make it difficult for students to write while teachers find it difficult to move around to help a student in need or mark students work while the lesson is going on. Several research works showed that small class size of between 15 and 20 students result in learning gains as measured by standardized tests in reading. These studies have shown that classes with fewer students have positive effects on the academic achievement of students who are slow learners. These are the students that the majority of teachers are increasingly dealing with in various classes in schools. The overcrowded classrooms are associated with lower students performance as confirmed by the internal tests of different classes in the school. Not only do large class sizes have an adverse impact on learning, but also on the teaching process itself.

Earthman and Lemasters (2011) opined that increasing class sizes have a detrimental effect on student behavior, such that it reduces the opportunities for schools to provide the level and quality of teaching that is needed to enhance student learning and achievement. With smaller class sizes, students and teachers can get to know one another and the teacher can much more readily identify the strengths and weaknesses of each student. This gives students the confidence to continue their education and not feel abandoned in an overcrowded and boisterous atmosphere where learning takes a back seat to bringing the class under control. Angila (2010) found out that public primary schools which were overcrowded with teacher pupil ratio of 1:70 performed poorly as against their counterparts in private schools which had a teacher-pupil ratio of 1:25. The results indicated a very high performance in private

schools which implies that class size has a great effect on academic performance. Small class sizes create more intimate settings and therefore can increase teacher-students bonding which has been shown to have a positive effect on students' academic performance and can lead to attainment of educational objectives. Crosnoe, Johnson and Elder (2014) revealed that class size above 40 have negative effect on students academic performance in school. Ogusanu (2015) also asserted that the quality of education that children receive bears direct relevance to the availability or lack of physical resources such as classroom building, library, laboratory, instructional facilities and overall atmosphere in which learning takes place. Nwagwu (2014) stated that a situation where a teacher teaches more than fifty (50) students in a class as opposed to 35 in primary school and 40 in secondary school as provided by the Federal Republic of Nigeria (2014) does not give room for effective teaching and learning. Fafunwa(2010) postulated that there is a big gap in quality, resulting from large number of students in a crowded classroom, using inadequate and obsolete equipment and with disillusion teachers.

Beside class size, shape and composition, the environment within and outside the classroom must be enriched to stimulate the child's cognitive development. This was why Winkel (2012) stressed that the more a child is exposed the more he wants to learn. Every educator would argue strongly that overcrowded classrooms have an adverse impact on education, learning and society. Large classes have continued to wreck many positive advances in education and learning in the less developed countries hence the need for management of physical resources.

Creative classroom management requires the teacher to understand, appreciate and accommodate differences in personality (Zabel&Zabel, 2013). It also involves understanding how the physical and psychological environment affects the learners and the teacher. A careful use of classroom space makes a considerable difference in classroom behavior. The physical features of a classroom are thus important to student learning and behaviour. Excellence in education thrives in an environment where students are highly motivated through a conducive classroom situation. Kennedy (2014) argued that school classroom design affects learning outcomes and advocates that planners should look at students' developmental needs and curriculum in order to make proper planning and re-designing and expansion of classrooms to fit those needs and requirement. In addition Stricherz (2011) in a study showed that students' achievement lags in shabby and overcrowded classrooms with inadequate ventilation and faulty heating system.

Utilization of libraries and students' academic improvement

Libraries are collection of books, manuscripts, journals, and other sources of recorded information. They commonly include reference works, such as

encyclopedias that provide factual information to other sources; creative works including poetry, novels, short stories, music scores, and photographs; non-fiction, such as biographies, histories and other factual reports; and periodical publications, including magazines, scholarly journals and books published as part of series.

Onuoh (2013), posited that there is a positive relationship between school libraries and students' learning outcomes. According to him, the test scores of students who used the libraries frequently are higher than those who did not use the libraries frequently. According to him most students do not use the libraries these days because of many factors which include lack of knowledge of the use of catalogue which helps the library user to locate or identify the materials needed and also lack of orientations or seminars for students on the use of libraries. Therefore, Adeoye (2014) in his study on the impact of the school libraries on students' academic achievement found out that, in most cases, learning achievement is dependent on the students' use of the libraries and positive study habits.

Majority of Nigerian students do not have the habits of regular use of the school libraries; as it has been put in abeyance. According to Ayo (2013), the advent of the Information Communication Technology (ICT), has caused many students to get whatever materials they need from the internet instead of using the libraries often. Also, most of the materials in most Nigerian school libraries are regarded as outdated; so students prefer to use internet materials which they think are more current in information than the school libraries. In the same vein Adeleke (2012) has attributed the low-use of libraries by many Nigerian students to short supply of experienced library specialists; lack of funds to provide adequate and up-to date books, encyclopedia and other materials in the school libraries, non-organization of orientation course for students and so on. These factors were said to have contributed to low standard in education and poor academic performance of students in Nigeria.

Research findings carried out by Atkin (2012), showed that there is a strong relationship between library use and students' academic success at all ages, from the primary school right through the University level. Students who study most of the time using the library, and who understand what they study usually attain good grades. According to Ninio (2010), the relationship between reading and learning begins even earlier in the pre-primary school years, children who are exposed to story book reading before they go to school, tend to have larger vocabularies, general knowledge and better conceptual development than their peers who do not read. In addition, they learn to read and write more easily than their counterparts who do not read often. Reading habits is formed right from childhood. Therefore, students, who do not form the habit of reading, would not read in the school libraries, even if

they are forced to go there and read hence the low performance of students who do not use the library regularly.

Smith (2011), carried out a study in which the academic achievement of students who frequently use the libraries were compared with those who do not use the libraries. According to the outcome, the students who frequently read in the libraries and carry out researches, performed better than those who do not or who use the library sparingly. Hunter (2014), opined that adequate and frequent use of libraries yielded a high academic success amongst students. For instance, in the school libraries, students discover more recent information and gain a lot of knowledge through current and valuable materials they find in the libraries. According to Anyadike (2010), in a related study on the relationship between the use of library facilities and students' academic achievement, found out that students perform better when they frequently use the school libraries than when they do not.

Statement of the Problem

Physical resources are an integral part of the educational system, as they contribute to the completion of the curriculum and implementation of the educational programmes offered in schools at all levels of education. In spite of the important role physical resources occupy in junior secondary schools, it is perceived that there is paucity of classrooms and libraries. This has also affected utilization of these facilities; which are supposed to stimulate students learning and boost their academic improvement.

In collaboration, Bello (2012) found out in an independent study that, physical resources are insufficient in schools and that the existing ones are not properly supervised, maintained and are either under-utilized or over-utilized. The researchers also found out that, classrooms are inadequate and are always overcrowded due to high enrolment rate; the libraries are filled with broken, torn and obsolete library resources which discourage students from accessing them. It was reiterated that these inadequacies and anomalies have discouraged learners and reduced their passion for learning which perhaps may have contributed to poor academic performance of students in internal and external examinations. Therefore, this study hopes to unravel management of physical resources on academic improvement of junior secondary school students in Rivers State.

Purpose of the Study

The purpose of the study was to investigate the management of physical resources on the academic improvement of Junior Secondary School Students in River State. The specific objectives were to:

1. Determine the extent provision of conducive classrooms influence academic improvement of Junior Secondary School Students in Rivers State, Nigeria.
2. Examine the extent utilization of libraries influence academic improvement of Junior Secondary School Students in Rivers State, Nigeria.

Research Questions

1. To what extent does provision of conducive classrooms influence learning improvement of junior secondary school students in Rivers State, Nigeria?
2. To what extent does utilization of libraries influence learning improvement of junior secondary school students in Rivers State, Nigeria?

Hypotheses

- Ho₁ There is no significant difference between the mean opinion of male and female students on the extent provision of conducive classrooms influence their learning improvement.
- Ho₂ There is no significant difference between the mean opinion of male and female students on the extent utilization of libraries influence their learning improvement.

Methodology

The research design used for this study was the descriptive survey design. The population of the study consisted of all the 36,957 Junior Secondary School 3 (J.S.S 3) students consisting of 17,286 males and 19, 671 females in the 309 public Junior Secondary Schools in the 23 Local Government Education Authorities (LGEAs) of Rivers State. A sample size of 394 students consisting of 203 males and 191 females were selected from 3940 students (2032 males and 1908 females), which is the total number of students from schools in the six selected LGEAs using the multistage and stratified random sampling techniques. A self-developed questionnaire titled: “Management of Physical Resources for Academic Improvement of Students in Junior Secondary Schools Questionnaire” (MPRAASJSSQ)” was used to collect data from the respondents. The instrument had two (2) sections; Sections A and B. Section A consisted of demographic information while Section B had questionnaire items based on the research questions. The response scale was structured on a 4-point modified Likert rating scale of Very High Extent (VHE); High Extent (HE); Low Extent (LE); and Very Low Extent (VLE) with values of 4, 3, 2 and 1 respectively. Cronbach Alpha was used to test the reliability and reliability indexes of 0.71 and 0.72 were obtained. Mean and standard deviation were used to answer the research questions. The criterion mean was 2.50. Questionnaire items with ratings below 2.50 denoted ‘Low Extent’ while 2.50 and above signified ‘High Extent’. The hypotheses were tested using z-

test statistics at 0.05 level of significance. Analyzed data therefore, with calculated z-values above the z-critical value of ± 1.96 were rejected and below ± 1.96 were accepted.

Analysis of Data and Result/Hypotheses Testing

Research Question 1: To what extent does provision of conducive classrooms influence learning improvement of junior secondary school students in Rivers State, Nigeria?

Table 1: Mean Responses of Male and Female Students on the Extent Provision of Conducive Classrooms Influence Learning Improvement of Junior Secondary School Students.

S/N	Items	Male		Female		Decision
		(\bar{X})	SD	(\bar{X})	SD	
1	Classrooms are inadequate.	3.11	1.05	3.01	1.17	HE
2	Available classrooms are not spacious enough.	3.13	1.09	3.00	1.18	HE
3	Classrooms are overcrowded because they are few.	3.10	1.07	2.61	0.93	HE
4	Available classrooms are not conducive for learning because of poor ventilation.	3.24	0.91	2.88	0.87	HE
5	Overcrowded classrooms produce noise that distract learners.	2.87	0.91	2.75	0.89	HE
Grand Mean/SD		3.09	1.01	2.85	1.01	HE

The analysis of data on research question 1 as displayed on table 1 showed that all questionnaire items were of high extent. The responses to the items revealed that classrooms are not adequately provided and the available ones are not conducive for learning. The grand mean scores of 3.09 and 2.85 which are greater than the 2.50 criterion mean score for acceptance which reveals that provision of conducive classrooms influence learning improvement of junior secondary school students to a high extent.

Research Question 2: To what extent does utilization of libraries influence learning improvement of junior secondary school students in Rivers State, Nigeria?

Table 2: Mean Responses of Male and Female Students on the Extent Utilization of Libraries Influence Learning Improvement of Junior Secondary School Students.

S/N	Items	Male		Female		Decisions
		(\bar{X})	SD	(\bar{X})	SD	

1	Inadequate supply of current reading materials deter us from using the library.	3.12	1.06	3.04	1.15	HE
2	We hardly use the library due to inadequate sitting facilities.	3.15	1.00	3.09	0.86	HE
3	Available books are obsolete	3.16	1.07	3.00	1.17	HE
4	Erratic power supply	3.24	0.91	2.99	1.17	HE
5	Lack of recommended textbooks	3.16	1.08	2.69	0.92	HE
Grand Mean/SD		3.17	1.02	2.96	1.06	HE

The data displayed on table 2 indicated high extent to all the questionnaire items. It also indicated that libraries are underutilized due to inadequate library resources. The analysis further depicted that utilization of libraries influence learning improvement of junior secondary school students to a very high extent with mean scores of 3.17 and 2.96 which are higher than the 2.50 criterion mean value for high extent.

Hypotheses Testing

Ho₁ There is no significant difference between the mean opinion of male and female students on the extent provision of conducive classrooms influence their learning improvement.

Table 3: z-test Analysis of Difference Between the Mean Responses of Male and Female Students on the Extent Provision of Conducive Classrooms Influence Learning Improvement of Junior Secondary School Students.

Respondents	N	(\bar{X})	SD	DF	LS	z-cal.	z-crit.	Decision
Male	203	3.09	1.01	392	0.05	1.71	±1.96	Failed to Reject
Female	191	2.85	1.01					

At 392 degree of freedom and 0.05 level of significance, z-calculated was 1.71 and z-critical was ±1.96. Since z-calculated was less than z-critical (1.71 ≤ ±1.96), the null hypothesis was therefore accepted which states that there is no significant difference between the mean opinion of male and female students on the extent provision of conducive classrooms influence their learning improvement.

Ho₂ There is no significant difference between the mean opinion of male and female students on the extent utilization of libraries influence their learning improvement.

Table 4: z-test Analysis of Difference Between the Mean Responses of Male and Female Students on the Extent Utilization of Libraries Influence Learning Improvement of Junior Secondary School Students.

Respondents	N	(\bar{X})	SD	DF	LS	Z - cal	Z - crit	Decision
Male	203	3.17	1.02	392	0.05	1.50	± 1.96	Failed to Reject
Female	191	2.96	1.06					

At 392 degree of freedom and 0.05 level of significance, z-calculated was 1.50 and z-critical was ± 1.96 . Since z-calculated was less than the z-critical ($1.50 \leq \pm 1.96$), the null hypothesis was therefore accepted which states that there is no significant difference between the mean opinion of male and female students on the extent utilization of libraries influence their learning improvement.

Discussion of Findings

Findings on research question 1 on table 1 revealed that male and female students opined that provision of conducive classrooms influence learning improvement of junior secondary school students in Rivers State to a high extent with a grand mean of 2.97. Hypothesis 1 on table 3 showed that there was no significant difference between the mean opinion of male and female students on the extent provision of conducive classrooms influence their learning improvement, with z-calculated value of 1.71 which was less than z-critical value of ± 1.96 . This finding is in agreement with Odufowokan (2011) who unraveled that physical resources like spacious classrooms with proper ventilation, lighting and colour were significantly related to students' academic achievement. The finding is also in line with Wagithunu, Edabu and Sinan (2019) who affirmed that the provision and management of physical facilities such as libraries and lecture halls are core in attaining the educational objectives.

Findings on research question 2 on table 2 showed that male and female students opined that utilization of libraries influence learning improvement of junior secondary school students in Rivers State to a high extent with a grand mean of 3.07. Hypothesis 2 on table 4 showed that there is no significant difference between the mean opinion of male and female students on the extent utilization of libraries influence their learning improvement, with z-calculated value of 1.50 which was less than z-critical value of ± 1.96 . This finding is in tandem with Omobolanle (2015) which

found out that, students do not access the library regularly because majority of secondary schools' libraries in states across Nigeria have very poorly developed collections and the materials available ranged from being torn and outdated to being out rightly irrelevant to educational development. School administrators would rather fund visible projects such as construction of additional classrooms rather than stock the library with needed relevant materials. This is also in congruence with Angila (2010) whose independent research indicated a positive relationship between effective utilization of physical resources, and the pupils' performance.

Conclusion

From the findings of the study, it was concluded that inadequate provision of conducive classrooms lead to overcrowding of the available ones and militate against effective and efficient learning. Secondly inadequate library resources in Junior Secondary Schools discourage students from using the library thus leading to underutilization of libraries which is detrimental to students' academic success. Both variables influence academic improvement of Junior Secondary School Students to a high extent.

Recommendations

1. The government should construct additional classroom blocks in all Junior Secondary Schools to enhance effective teaching and learning processes.
2. The government should in collaboration with other stakeholders procure and equip the libraries in public Junior Secondary Schools with essential library resources in order to encourage reading culture amongst students.

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