



## SCHOOL PLANT MANAGEMENT FOR EFFECTIVE TEACHING DELIVERY IN SENIOR SECONDARY SCHOOLS IN RIVERS STATE

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**ABSTRACT:** *The study examined school plant management for effective teaching delivery in senior secondary schools in Rivers State. The study design was descriptive survey design while the population of the study comprised of 6,657 teacher and 302 principals in public senior secondary schools in River state. The sample consists of 823 respondents (principals and teacher) of government senior secondary schools which representing 12% of the entire population. Three research questions and three corresponding null hypotheses were formulated to guide the study. A self-structured questionnaire titled “School Plant management for effective teaching delivery questionnaire” with 22 items was used. The instrument was duly validated by two experts from measurement and evaluation and a reliability index of 0.84 was established. The findings of the study revealed typed of school plants in secondary schools, the respondents agreed that inadequate funding, lack of training, overcrowded class room e.t.c., are challenges of utilization school plant. Furthermore, the study revealed that the respondents agreed that all the items listed were the strategies for managing school plants. The study recommended amongst others that government and other stake holders of education should provide adequate school plants for efficiency and effectiveness in the system, stake holders of education should address the various challenges of utilizing school plants and that heads of schools, school personnel and students should be trained and be re-trained on the various strategies of managing school plants.*

**KEYWORDS:** Effective teaching Delivery, School Plant, School plant Management.



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## INTRODUCTION

Most individuals see education as the live wire to development in a society. Some postulate that it is a mechanism through which development and growth can be achieved or realized whether on an individual basis, group or the society at large. To others, education is believed to be the propeller that enhances the engine of any society or economy to the path of development. It is worthy to state that for educational sector or system to be smoothly run, there are school plants that should be adequately managed in the system so that the achievement of the set goals and objectives of the system can be actually be accomplished. So, in essence, the smooth running of every establishment such as the school system is dependent to a large extent on how these school plants are handled or managed

School plant management plays important role in influencing the educational system especially the physical environmental. It has pivotal role in shaping the educational landscape, influencing the physical and environmental conditions within which students learn and teachers instruct. The concept encompasses the planning, development, maintenance, and utilization of the physical infrastructure and resources that constitute an educational institution. From classrooms and libraries to sports facilities and technological infrastructure, the school plant serves as the foundation upon which the academic journey unfolds.

The relationship between school plant management and effective teaching delivery is a subject of considerable importance and interest within the realm of education. A well-maintained and efficiently managed school plant can create an environment conducive to learning, positively impacting the overall teaching delivery in the school system. On the contrary, neglect or inadequacy in the management of these physical resources may present obstacles that hinder educational outcomes. Suleman and Hussain (2014) opined that while sufficient facilities encourage academic success and guarantee to strengthen the entire institutional performance, bad and inadequate facilities have an impact on the institutions' overall performance.

School plant refers to the physical facilities available in the school such as the school site, the buildings, equipment's, machinery, furniture, electrical and water supply infrastructure, medical facilities etc which must be present to aid teachings and learning conditions for enhanced performance. No wonder Lawrence (2003) emphasizes that the unavailability of school resources negatively affects the staff and students' motivation. Invariably, schools that are equipped with the necessary school plants and these plants properly managed has the propensity to positively affect teachers' motivation to teach and also improve students' academic performance. The sizes of classrooms, playground and availability of material resources relative to the number of students in a school could also affect learning. School facilities may help in providing the desired education for the students attracting them towards the different school programs while deteriorating conditions may encourage incessant complaints from students and may demoralize students' seriousness. Furthermore, poor physical working condition of the school facilities may lead to mental fatigue, truancy, frustration, discomfort and poor health. These could lead to reduce academic performance of the students as well as increase among the secondary educator (Ihua-Jonathan 2013).



It is so pitiful to state that the present state of most public senior secondary schools in Rivers State have not been in a good shape. In some schools, students sit on the ground to receive lessons, many of the classrooms, laboratories, playground, staff rooms, administrative blocks etc. are in a terrible state since there is absence of chairs and tables for both teachers and students and in some situations, these plants may not be available, managed or maintained to allow teachers put in their best in terms of service delivery for efficiency and effectiveness in the system.

School plants make up the requisite tools and structures required for any viable educational institution to function effectively and accomplish the objectives for which it was established in the first instance. They are facilities which physically and spatially enable teaching- learning and by extension help in producing desirable results as evinced by good academic performance of products of an education. School plant includes classrooms, dormitories, libraries, laboratories, staff-rooms, teacher's quarters, examination halls and administrative buildings. School plant is described as the site, the buildings, the equipment and all the essential structures, permanent and semi-permanent as well as such machines and laboratory equipment, the blackboard / chalkboard needed for effective teaching and learning.

Managing and maintaining school plants in schools is very important for ensuring effective service delivery in schools. This is because when school plants are well managed and maintained in every organization such as the school system, it could lead to the school having an optimal learning environment, safety and good security, resource efficiency, enhanced service delivery, positive perception of the school, promotes students' well-being and compliance with regulations of the system.

In essence, one can uphold that managing school plant effectively is vital for providing efficient teaching delivery as well fosters a supportive learning environment in schools for both the teacher, learner and the society at large.

### **Conceptual Review**

The relevant literatures pertinent to this study were studied in order to provide a better understanding of what previous studies have done.

### **School Plant**

School plant which is also known as school physical facilities includes the school buildings, classrooms furniture, equipment, instructional materials, laboratories, libraries, play grounds, etc. School plant refers to the school site, the buildings, the play grounds, the equipment and other materials and resources provided in the school for effective teaching and learning operations (Onwurah, 2004). For Asiegbu and Amogbo (2021), school plants could be defined as those facilities seen in schools which can be seen physical. They went further to affirm that these amenities are non -consumable that is to say that they are perceptible properties made to enhance learning and teaching in the school system and its environment healthy teaching and learning. These structures or facilities according to Asiegbu and Amogbo (2021) array from buildings, land, laboratory equipment and all teaching or instructional aids, land, buildings to laboratory equipment and furniture. It should be of note that for efficiency and effectiveness to be noticed or seen in the



school system, school plants must be put in place before the commencement of schools. are put in place before the school begins. No wonder Alimi, Ehinola and Alabi, (2012) assert that school plants are made up of vital machineries and edifices that are indispensable for any sensible educational system to accomplish or achieve the goals and objectives of the educational system as stipulated in the national policy of education.

In this study, school plants will be seen as all the facilities, amenities, gadgets, equipment as well as all physical structures which helps to enhance teaching and learning activities in the school system. It should be of note that the provision of adequate learning facilities at all levels including equipment and human resources enhances the quality and relevance of imparted skills of learners (Lumuli, 2009). Indeed, physical resources go a long way in creating conducive environment that promote effective teaching and learning. No wonder Ajayi (2007) upheld that high academic performance of the students may not be guaranteed were school plants such as school site planning, instructional space planning, administrative space planning, space of convenience and circulation space planning are ill-sited, structurally defective, not properly ventilated and not spacious enough for use. In line with this, Jones (2018) affirmed that infrastructures, fire safety, electrical systems, playground facilities play crucial roles in ensuring a more secured educational setting that is productive in nature.

From the forgoing, one can rightly say that any school that has passable teaching aid as well as adequate materials for teaching and learning would likely pole better students results than school which has inadequate school plants and machineries. No wonder Juma (2011) re-counts excellent performance in both internal and external examinations to teaching and learning resources in schools. Juma (2011) further affirmed that students that come from schools that are poorly equipped have the tendency to perform poor in examinations. The reason could be as a result of non-availability of facilities or inadequate school plant. Research also proved that non equipped workshops and laboratories in our school system has conceded the teaching of courses or subjects which are practically oriented in nature since most topics that are supposed to be practical in nature are now taught theoretically. In line with line, Asiegbu and Amojò (2021) in a work titled school plant and academic performance of students in public secondary schools in Nneri Education zone of Anambara state assert that the interactions that the researchers had with students of some secondary schools in Nnewi Education Zone of Anambra State, most excuses given by the students for their dismal academic performance was that they lacked a good learning environment in the schools due to the inadequacy of school plants or the state of the school plants.

### **Effective Teaching Delivery**

Effective teaching delivery has to do with the process of imparting knowledge and enhancing learning experience in such a way that makes students get adequately engaged, understands, and achieve what they are supposed to achieve. It involves elements such as clear communication, utilization of instructional materials, engaging on instructional methods, fostering a positive learning environment, assessing students' progress and providing on-time feedback. Essentially, effective teaching delivery ensures that students do not only receive information rather they comprehend and apply it in meaningful ways, ultimately leading to academic success and personal growth.



Hawthorne (2022), defined effective teaching delivery as the strategies, knowledge, procedures and deeds done by the teacher in the school environment that has the tendencies of bringing out the best on the students. For an educator to be effective, such an educator must have optimistic impact on the students that they teach as well as must have used their expertise in improving teaching and learning process. Hawthorne (2022) went further to mention the following as the indicators of effective teaching delivery as thus; positive learning environment, motivation, positive relationship, strong communication skills, knowledge of the subject matter, passionate, providing high quality learning outcome, opportunity, reflects, uses assessment for learning effectively, develops metacognition, uses effective instruction, uses facilities and scaffolding.

### **Types of School Plants**

Grouping or classifying school plants has proven to be a great problem to researcher over the years. Some educationist classified it based on location while some also classified them based on the basic functions these plants perform in their various capacities in school. Scholars such as Inguran, Tabitha, Linda and Terna (2019) opined that school plants varies and that it includes facilities such like; the school spot, instructional facilities, medical facilities, school laboratories and workshops, recreational facilities, classroom facilities etc. These researchers went further to state that these school plants are very important in the teaching and learning process and that when not made available in school system, it could cause deficiency in teaching and learning. In line with this, Oyosola (2007) aver that school plants encompasses the site, playgrounds, health or medical facilities, instructional materials as well as all forms of facilities and equipment's found in the school the site, buildings, play grounds, health facilities, instructional materials and all forms of school equipment which facilities learning and teaching process It is the controlled environments which facilitates teaching and learning process as well as protect the wellbeing of the occupants. The main objective of a school plant is to satisfy educational goals which have been predetermined by educational planners. These plant-related facilities in schools can serve both educational and environmental purposes, fostering a connection between students and the natural world. They can also contribute to a greener and more sustainable school environment. Research show that children' reading strategies are improved by the written language used on labels and signs in the natural world. These labels and indications, sometimes known as environmental print, assist pupils in drawing connections between previously learned material and newly presented written material.

Ultimately, learning environments that prioritize literacy enable students to perceive the relevance of literacy in everyday life. In line with this, Suleman and Hussain (2014) opined that while sufficient facilities encourage academic success and guarantee the entire institution performance to remain firm in terms of academic performance, inadequate and deplorable facilities have great impact on the institutions' overall performance in terms of students' academic performance and teachers' motivation. Students' academic performance could be adversely affected also by unappealing and obsolete school buildings, cracked classroom walls and floors, a lack of toilets, desks and benches, a lack of transportation options, an inadequate security system, lack of drinking water, lack of power, lack of playgrounds, shortage of staff, inadequate classrooms, overcrowded classrooms, deficiency of instructional technology and absence of first aid facilities (Suleman & Hussain 2014). Thus, it is accurate to state that the availability of school plants has significant impact on pupils' academic achievement. Suleman and Hussain (2014) further noted that Pakistan's





educational institutions suffer from dearth of physical infrastructure, which has led to teaching and learning ineffective in the system.

In a similar vein, Agabi (2004) also recognized and grouped school plants based on their functions which include; general school plant, recreational school plant, residential and instructional school plants. For Kpee (2013), school plant includes all facilities essential for the establishment and operation of a school to enhance its effectiveness. So, for this study, one can say that school plants incorporate every tangible structure as well non-living asset that are vital for the advancement and expansion of a didactic institution.

### **Management of school plant for effective teaching delivery in secondary schools**

School plants are vulnerable to wear and tear; hence, it is very important that they be adequately maintained to keep them in their original state as much as possible. Maintenance of the school plants involve those elements related to servicing, preserving, repairing and protecting them. It is not just limited to the day-to-day tasks, but it has to be a long -term project, a continuous cycle of maintenance to ensure the suitability of the environment for learning, and provide a good atmosphere for both staff and students. Jibrin (2014) pointed out that, the school plant is a very important part of educational planning. Unless schools are programmed, buildings adequately constructed and equipment adequately utilized and planted, efficient teaching and learning may not be realized. The responsibilities of the principals in secondary schools do not stop at the human and financial aspects of the school but also involves their ability to effectively and efficiently manage the school site instructional materials, school libraries, students' hostels, staff offices, medical facilities as well as recreational facilities among others. Ogundele and Moronfoye (2013) posits that effective management of school plants is a must to make the school pleasant, save and comfortable place for the activities of the community. In view of this, Bulama in Oleforo and Maxwell (2015) identified in a study that poor state of infrastructure (school plant) is a major factor that affects effective academic achievement of students in south west of Nigeria. This goes to buttress the importance educators need to attach to effectively manage the available school plant especially in teaching practical oriented subjects. The aim of maintenance of school plants is to ensure that it remains in the best condition for educational instruction at all times. School plant maintenance requires maximum cooperation and hard work from the officers of Ministry of Education, the school administrators, the school staff (academic and non-academic) the students and the community where the educational institution is located. According to Akpakwu (2012) types of school plant maintenance include precautionary and prognostic maintenance, curative and emergency maintenance, breakdown maintenance, running maintenance and shutdown maintenance. The achievement of the overall goals and objectives of education revolves around the ability of the learners to utilized the various opportunities offered by the educational institution and its environment. It is not just imperative that educational institution should have a functional school plant, it equally very important that each school plant be well managed and maintained to improve students' academic performance and teachers' development. Mark (2002) opined that the type of school plant maintenance adopted by the school administrator will certainly determine the tone of the school, which in-turn will promote either effective or ineffective teaching & learning process in the school. It is ideal that the provision of school facilities be marched with optimal utility to avoid either over utilization or underutilization. As a result of the harsh economy



experienced in the nation recently, the provision or replacement of new facilities to cope with the explosion in enrolment has become a very big colossal task. Avundaa, Onyekosor, and Onyiruka (2023) stated that existing facilities in the school system are over-stretched which has led to recurrent maintenance issues. Avundaa, Onyekosor, and Onyiruka (2023) went further to affirm that the introduction of certain school plants like Information and Communication Technology into our educational system without trained personnel actually results to under-utilization of such school plant in the system. A research work carried out by Okori (2008) avowed that a school environment that is adequately maintained and managed has the likelihood to create positive teaching- learning atmosphere that can enhance scholars' engagement and advancement in academic endeavor. Similarly, Elume (2004) declared that school administrators who in one way or the other prioritized the regular maintenance of school plants experienced higher levels of job satisfactions among their teachers which in turn led to improved performance among the students. No wonder Ihua-Jonathan (2013) opined that educators who find themselves in schools or establishment that are devoid of burnout tend to put in there best to ensure that improved performance is noticed in the system. Ihua-Jonathan (2013) went further to state that when schools educators are comfortable in a system, they tend to come early to work, do duties assigned to them diligently as well as go the extra mile to ensure high level of teaching. In essence, managing school plant for effective teaching delivery is very important.

### **Challenges of utilizing school plant in schools**

Given the high cost of purchasing new materials, plants and facilities in the system as a result of dwindling economy, it is imperative to state that proper care and maintenance of school facilities should be encouraged. The burden of maintaining the school grounds should not falls on only the school administrators but should as well be the responsibility of all school personnel and students at large. With this, utilization of school plant for teaching and learning process for efficiency and effectiveness in the system will be actualized efficiently. Though, caring, maintaining and managing equipment and facilities in a school system can be a complex task so, there is the tendency that in the process of using such school plant, various challenges may arise. Some common challenges associated with managing school equipment and facilities could spare from; limited budgets, limited resources, aging Infrastructure, technological obsolescence, inadequate maintenance, insufficient funds or staffing for regular maintenance, safety and compliance, security concerns, growing student populations, lack of training, lack of coordination and communication, deficiency of preparedness, community engagement, regulatory changes, long-term planning etc. For Gimah (2020) the challenges faced by school administrators and educators in managing school plants include; inadequate funding, political problem, inaccurate data, manpower problem, administrative issues, issue of maintenance policy, data information on school plants, negligence by facility managers, issues of maintenance policy, etc .

Addressing these issues requires proactive and strategic approach to facility and equipment management. Alliance by school administrators, teachers, staff, and the community is crucial to finding workable solutions. Consistent valuations, ranking of needs, and actual resource allocation are key components of successful management in the school system. Where projects will be done based on the need of the school system.



## **Strategies in managing school Plant for effective teaching delivery in Senior Secondary Schools in Rivers State**

School plant managing strategies denote those methods, plans, tactics and actions undertaken by educational institutions to effectively oversee and maintain their physical facilities, infrastructure, and resources. These strategies encompass a wide range of activities aimed at ensuring that the school's physical environment supports its educational mission and objectives while also maximizing efficiency, safety, and sustainability. Gimah (2020) defined school plant managing strategies as those activities needed for ensuring that school plant such as building, instruments, equipment and grounds are kept in its original state; either by repairs or replacements. This maintenance is done to certify this school plant are in a working condition. Gimah (2020) went further to affirm that these maintenance strategies include activities and services that ensures that these plants are in a functional and useable state which embraces activities such as dusting, cleaning, washing, sweeping, mopping, promin, repairs and maintenance etc. Stake holders of Education are charged with the responsibility to ensure that all activities needed for the smooth running of the school system should do so of which school plant management is one. In the face of economic challenges, secondary schools must proactively manage their physical assets to ensure that the school maintains a conducive learning environment for students. School plants has the tendency to experience wear and tear and if not properly maintained could get destroyed totally, so there is need for school educators to manage these plants for efficiency and effectiveness. These can be done through the following measures, consistent repairs and maintenance, asset inventory and assessment, energy efficiency measures, security and enhancements, integration of technology, sustainability initiatives, community engagement and partnerships, long-term planning and budgeting, staff training and development, flexibility and adaptability etc.

Mark (2002), is of the view that the type of school plant maintenance adopted by the school administrator will certainly determine the tone of the school, which in-turn will promote either effective or ineffective teaching & learning process in the school system. It is on this not that Onyene (2000) affirmed that the most effective strategy for school plant maintenance is through adequate integration and professional effort. In other words, school plant maintenance should involve everyone in the school system such as the government, school administrators, educators, staff and the students. In appraising the existing status of school plant maintenance in public secondary school, Onyene (2000) further stated that school administrators and managers just like their counterparts in the corporate world are grossly deficient in matters of school plant maintenance and management. Unfortunately, this seemingly lack of maintenance culture has become a worrisome trend in the Nigerian nation recently. It has become a tradition that has woven itself into the fabric of every public institution in Nigeria. Some of our secondary schools are indicators of total neglect as they portray pictures of abandonment which may have been caused by all stake holders including government, school heads, teachers, students etc (Lawanson & Gede, 2011). In a similar note, Akpakwu (2012) aver that types of school plant maintenance include preventive and predictive maintenance, corrective and emergency maintenance, breakdown maintenance, running maintenance and shutdown maintenance. The achievement of the overall goals and objectives of education revolves around the ability of the learners to utilized the various opportunities offered by the educational institution and its environment. It is not just imperative





that educational institution should have a functional school plant, it equally very important that each school plant be well managed and maintained to improve students' academic performance and teachers' development.

By implementing these strategies, schools can effectively manage their plant to create safe, efficient, and sustainable learning environments for students, staff, and the society at large.

### **Statement of the Problem**

Over the decade's research have shown an unstable decline in the academic performance of students in senior secondary schools in Rivers State despite the engagement of newly employed educators into the public secondary schools by the Government of Rivers State few years back. Engaging such number of work force in the system was to curb poor academic performance of students in both the external and internal examination. This is because most public schools lack school plant for teaching and learning to effectively take place in schools. The schools are ill-equipped with the right teaching and learning infrastructures and equipment's that will aid in making teaching and learning a memorable experience for both teachers and students.

This is evident as the results of Secondary Certificates Examination conducted by the various Examination bodies were extremely poor in Rivers State between 2017-2022. This proves that there is a big gap in quality and effectiveness as a result of insufficient school plants as well as not managing the available ones in the system which has led to high rate of failure. Could this be the case of government senior secondary schools in Rivers State? Could the provision of adequate school plant by the government and school administrators usher in a new era where teachers can put in their best for high productivity in secondary schools?

It is against this backdrop that this work sought to investigate school plant management for effective teaching delivery in senior secondary schools in Rivers State.

### **Purpose of the Study**

The main aim of this study was to investigate school plant management for effective teaching delivery in senior secondary schools in Rivers State. Specifically, the study sought to identify:

1. types of school plants available in schools for effective teaching delivery in public secondary schools in Rivers State
2. the challenges of utilization of school plants for effective teaching delivery in Senior Secondary Schools in Rivers state.
3. identify the strategies for managing school plants for effective teaching delivery in senior secondary schools in Rivers State.

### **Research Questions**

1. What are the various types of school plant available in schools for effective teaching delivery in public secondary schools in Rivers State?



2. What the challenges of utilization school plant for effective teaching delivery in Senior Secondary Schools in Rivers state?
3. Identify the strategies for managing school plant for effective teaching delivery in senior secondary schools in Rivers State?

### **Hypotheses**

The following Hypotheses were tested at 0.05 level of significant

**Ho1** There is no significant difference in the mean rating on male and female respondents on the various types of school plants available in schools for effective teaching delivery in public secondary schools in Rivers State.

**Ho2** There is no significant difference in the mean ratings of male and female respondents on the challenges of utilization school plants for effective teaching delivery in Senior Secondary Schools in Rivers state.

**Ho3** There is no significant difference in the mean rating of male and female respondents on the strategies for managing school plants for effective teaching delivery in senior secondary schools in Rivers State?

### **Methodology**

The design adopted for the study was descriptive survey design and the population of the study comprised of 6,657 teacher and 302 principals in public senior secondary schools in River state. The sample consisted of 823 respondents (principals and teacher) of government senior secondary schools representing 12 % of the entire population. A self -structured questionnaire titled “School Plant Management for Effective Teaching Delivery Questionnaire “(SPMETDQ) with 22 items was used for data collection. The questionnaire adopted a 4- point Likert rating scale of Strongly Agreed (SA-4 points), Agreed (A-3 points), Disagreed (D -2 points) and Strongly Disagreed (SD-1). The instrument was duly validated by two experts from measurement and evaluation and a reliability index of 0.84 was established. For the purpose of data analysis, a criterion mean of 2.50 was use as a cut-off mark while mean and standard deviation were used to answer the research questions. A z- test statistical tool was used in testing all hypotheses at 0.05 level significance.

### **Results**

#### **Research Questions 1**

What are the various types of school plants available in schools for effective teaching delivery in public secondary schools in Rivers State?

**Research Question 1: What are the various types of school plant for effective teaching delivery in public senior secondary schools in Rivers State?**

Table1: Types of school plant for effective teaching delivery in public senior secondary schools in Rivers State



S/N	Types of School Plants	Male =300		Female=523		$\bar{X}$ of $\bar{X}$ s	Response
		$\bar{X}$	SD	$\bar{X}$	SD		
1	Recreational Facilities	2.50	1.22	2.50	0.10	2.50	Agreed
2	Laboratory	2.52	0.10	2.59	0.12	2.55	Agreed
3	Playground	3.00	0.14	2.52	1.24	2.76	Agreed
4	Library	3.14	0.54	2.54	0.33	2.84	Agreed
5	ICT Facilities	3.22	0.12	3.00	0.43	3.11	Agreed
6	Hostel facilities	2.58	1.00	3.21	0.24	2.89	Agreed
7	Reading Desks/Chairs	2.67	1.28	3.33	0.23	3.00	Agreed
8	Staff Room	2.59	1.96	3.21	0.46	2.90	Agreed
9	Technology Workshop	2.66	1.45	2.59	0.22	2.62	Agreed
10	Staff Quarters	2.52	0.23	2.77	0.46	2.65	Agreed
<b>Aggregate Mean</b>		2.74	0.80	2.73	0.27	2.74	Agreed

**Source:** Survey Date, 2024

Data in table 1 show the mean ratings and standard deviation of various types of school plant for effective teaching delivery in public senior secondary schools in Rivers State. From the table above, both the male and female respondents all agreed that items 1-10 on the table are types of school plants in school.

With a grand mean of 2.74 shows that the respondent agreed that all items in table 1 are the various types of school plant in school.

### **Research Question 2: What are the challenges of utilizing school plant for effective teaching delivery in public senior secondary school in Rivers State?**

Table 2: Challenges of utilizing school plants in public senior secondary schools in Rivers State?

S/N	Variable	Male=300		Female =523		$\bar{X}$ of $\bar{X}$ 's	Remark
		$\bar{X}$	SD	$\bar{X}$	SD		
11	Inadequate funding	3.00	0.10	2.51	1.42	2.76	Agreed
12	Negligence	2.89	0.26	2.70	0.12	2.79	Agreed
13	Political problem	2.56	0.14	2.51	0.19	2.54	Agreed
14	Lack of training	2.86	1.33	2.61	1.28	2.74	Agreed



15	Over crowded classroom	2.50	1.24	2.68	1.34	2.59	Agreed
16	Security concern	2.61	0.10	2.74	0.44	2.68	Agreed
<b>Grand Mean</b>		<b>2.73</b>	<b>0.52</b>	<b>2.63</b>	<b>0.80</b>	<b>2.68</b>	<b>Agreed</b>

**SOURCE:** Survey Data, 2024

Data in table 2 show the mean rating and standard deviation on the challenges of utilizing school plant for effective teaching delivery in senior secondary schools in Rivers State. The table shows that both male and female respondents had an agreement on all the items on the challenges of utilizing school plant in schools, Furthermore, with an aggregate mean of 2.68, It shows that all items (11-16) are challenges of utilizing school plant for effective teaching delivery in senior secondary school in Rivers State.

### **Research Question 3: What are the strategies for managing school plant effective teaching delivery in public senior secondary schools in Rivers State?**

**Table 3:** Strategies for managing school plant for effective teaching delivery in senior secondary schools in Rivers State.

S/N	VARIABLE	Male =300		Female =523		X of x	Remark
		$\bar{X}$	SD	$\bar{X}$	SD		
17	Preventive maintenance	2.10	0.03	2.40	0.04	2.25	Disagreed
18	Corrective maintenance	2.50	0.41	2.61	1.42	2.55	Agreed
19	Shutdown maintenance	2.30	0.33	2.43	0.48	2.36	Disagreed
20	Predictive maintenance	2.84	0.64	2.76	0.88	2.80	Agreed
21	Emergency maintenance	2.64	1.22	2.70	1.64	2.67	Agreed
22	Breakdown maintenance	2.66	1.46	2.78	0.66	2.72	Agreed
<b>Grand Mean</b>		<b>2.50</b>	<b>0.68</b>	<b>2.61</b>	<b>0.83</b>	<b>2.56</b>	<b>Agreed</b>

**Source:** Survey Data, 2024

Data in table 3 above show the mean rating and standard deviation on the strategies for managing school plant for effective teaching delivery in public senior secondary schools in Rivers State. The table above shows that both respondents agreed that corrective maintenance, predictive maintenance Emergency maintenance and breakdown maintenance on the item 18, 20, 21, 22 with grand mean of 2.55, 2.80, 2.67 and 2.72 respectively. However, the respondent has a disagreement on two items as the strategies for school plant management and these are on preventive maintenance and shutdown maintenance as seen on item 17 and 19 with mean of 2.25 and 2.36 respectively. Furthermore, with an aggregate mean of 2.56 shown on the table above, it shows that the respondents agreed that items 17 and 22 are the strategies for managing school plant for effective teaching delivery in public senior secondary school in Rivers State.



### Test of Hypotheses:

Ho1. There is no significant different in the mean rating of male and female respondents on types of school plant in public senior secondary school in Rivers State.

**Table 4: Test of difference in the opinion of respondents on types of school plant in public senior secondary school.**

VARIABLE	N	$\bar{X}$	SD	DF	z-CAL	Z- TAB	P-VALUE	Decision
Male	300	2.74	0.80	821	0.98	1.96	0.05	Accept
Female	523	2.73	0.27					

From the result of the hypothesis test shown in table 4 in the types of school plants in public senior secondary schools in Rivers State. It was revealed that at 0.05 level of significant using 821 degree of freedom, the z-calculated value of 0.98 is less than the z- tabulated value of 1.96. Hence the null hypotheses of no significant value on the opinion of the respondent on types of school plant in public senior secondary schools in Rivers State was retained.

**Ho2: There is no significant difference in the mean rating of male female respondents on the challenges of utilizing school plant for effective teaching delivery in public senior secondary schools in Rivers State.**

Table 5: -test of difference on the opinion of the respondents on the challenges of utilizing school plants for effective teaching delivery in public senior secondary schools in Rivers State.

VARIABLE	N	$\bar{X}$	SD	DF	z-CAL	z-TAB	P-VALVE	Decision
Male	300	2.73	0.52	821	0.64	1.96	0.05	Accept
Female	523	2.63	0.82					

From the result the hypothesis test shown in table (5) above on the challenges of utilizing school plants for effective teacher delivery in public senior secondary schools in Rivers State. From the table, it was observed that at 0.05 level of significant using 821 degree of freedom, the z- calculated value of 0.64 is less than the z-tabulated value of 1.96 Hence, the null hypotheses of no significant valve of the opinion of the respondents on the challenges of utilizing school plants for effective teaching delivery in public senior secondary schools was upheld.

**Ho3: There is no significant difference in the mean ratings of the respondents on the strategies for managing school plant for effective teaching delivery in public senior secondary schools in Rivers State.**

Table 6: Test of difference on the opinion of the respondents on the strategies for managing school plant for effective teaching delivery in public senior secondary schools in Rivers State

VARIABLE	N	$\bar{X}$	SD	DF	z-CAL	z-TAB	P-Value	Decision
Male	300	2.50	0.52	821	1.99	1.96	0.05	Reject
Female	523	2.61	0.82					





From the result of the hypothesis shown in table 6 above on the strategies for managing school plant for effective teaching delivery in public senior secondary schools in Rivers State, it was revealed that at 0.05 it was revealed that at 0.05 level of significance using 821 degree of freedom, the z- calculated value of 1.99 is greater than the z- tabulated value of 1.96.

Hence, the null hypothesis of no significant difference on the mean ratings of male and female respondents on strategies for managing school plant for effective teaching delivery in public senior secondary schools in Rivers State was not retained.

## **DISCUSSION OF FINDINGS**

The results of this findings shall be discussed under each research questions

### **Types of school plants in schools for effective teaching delivery in public senior secondary schools in Rivers State.**

Table 1 shows the mean ratings and standard deviation on types of school plants in schools for effective teaching delivery in public senior secondary schools in Rivers State. The table shows that both male and female respondents agreed that recreational facilities, laboratory, playgrounds, library, ICT facilities, hostel facilities, tables and chairs, staff room, staff quarter technology workshops were identified as the types of school plants in public senior secondary schools in Rivers state. This finding is in line with that of Inguran, Tabitha, Linda and Terna (2019) opined that school plants varies and that it includes facilities such like; the school spot, instructional facilities, medical facilities, school laboratories and workshops, recreational facilities, classroom facilities etc. This findings also agrees with Oyosola (2007) who aver that school plants encompasses the site, playgrounds, health or medical facilities, instructional materials as well as all forms of facilities and equipment's found in the school the site, buildings, play grounds, health facilities, instructional materials and all forms of school equipment which facilities teaching-learning process.

### **Challenges of utilizing school plants in public senior secondary schools in Rivers State**

Data on Table 2 show the mean ratings and standard deviation on the challenges of utilizing school plant for effective teaching delivery in public senior secondary schools in extent in Rivers State. The table show that the respondents accepted inadequate funding, negligence, political problem, lack of training, over-crowded class room, security concern as challenges of utilizing school plants with a corresponding mean of 2.76, 2.79, 2,54, 2.74,2,59 and 2.68 respectively. This finding is in line with the findings of Gimah (2020) who opined that the challenges faced by school administrators and educators in managing school plants include; inadequate funding, political problem, inaccurate data, manpower problem, administrative issues, issue of maintenance policy, data information on school plants, negligence by facility managers, issues of maintenance policy, etc. This findings also corresponds with the findings of Dada et al. (2018) aver that, as a result of dearth of resources in the nation, the amount of fund allotted for operating schools is insufficient because it cannot support all of the requirements and activities of the schools. As a result, school infrastructure deteriorates since the fund to maintain, care, conserve, renovation, repair, and rehabilitate the plants are not available.



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## **Strategies for managing school plant for effective teaching delivery in public senior secondary schools in Rivers State.**

Data on Table 3 shows the mean ratings and standard deviation on the challenges of utilizing school plant for effective teaching delivery in public senior secondary schools in extent in Rivers State. The table show that the respondents accepted corrective maintenance, predictive maintenance, emergency maintenance and breakdown maintenance with corresponding mean of 2.55, 2.80, 2.67, 2.72. The respondents however disagreed that preventive maintenance and shutdown maintenance with corresponding mean of 2.25 and 2.36 were strategies for maintaining school plant. However, the aggregate mean of 2.56 shows that all respondents agreed that items 17-22 are strategies for managing school plants for effective teaching delivery in public senior secondary schools in Rivers State. This finding is in agreement with the findings of Akpakwu (2012) who aver that types of school plant maintenance include preventive and predictive maintenance, corrective and emergency maintenance, breakdown maintenance, running maintenance and shutdown maintenance. Though, Onyene (2000) affirmed that the most effective strategy for school plant maintenance is through adequate integration and professional effort of all in the system.

### **CONCLUSION**

This study has demonstrated that managing school plant for effective teaching delivery in public senior secondary school is very paramount for effectiveness and efficiency in the system. The importance of managing school plant for effective teaching delivery cannot be emphasized since a school environment that is adequately maintained and managed has the likelihood to create positive teaching- learning atmosphere that can enhance scholars' engagement and advancement in academic endeavor. It is important that all stakeholders should be actively involved in school plant management for effective teaching delivery in public senior secondary schools in Rivers State.

### **RECOMMENDATIONS**

Based on the findings of this study and conclusion, the following recommendations are made;

1. Government and stake holders of education should make available those identified school plants for effective teaching delivery in school.
2. Stake holders of education should address the various challenges of utilizing school plants
3. School administrators, educators, non -teaching staff and students should be trained and re-trained on the various strategies in managing school plants.



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