



School Plant Planning and Students' Academic Achievements in Public Secondary Schools in Delta State

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Abstract

This study examined school plants planning and students' academic achievement in public secondary schools in Delta State. Four (4) research questions were raised and answered while four (4) null hypotheses were formulated and tested in the study. The variables in the study were reviewed from relevant literature. This research is a correlational study of ex-post facto design and the population consists of all the 479 public secondary school principals and 14,877 teachers in the twenty five (25) Local Government Areas of Delta State. The sample used for this study consists of 50 principals and 1,490 teachers in Delta State public secondary schools selected from 12 Local Government Areas. This represented 10% of the total population (principals and teachers) while 12 Local Government Areas represent 50% of the 25 Local Government Areas. The sampling procedure used was stratified random sampling technique. The instrument used for the study was a self developed questionnaire titled "School Plant Planning and Students' Academic Achievement Questionnaire and checklist titled "Students Achievement Checklist". The instrument was administered with the help of two trained research assistants in the various secondary schools sampled for the study. Mean and standard deviation was used to answer the research questions, while Pearson Product Moment Correlational Statistics was used in testing the null hypotheses at 0.05 level of significance. The findings revealed that pattern of school plant planning differs from one location to another, school facilities have not been equitably distributed to schools. It also revealed that urban schools are more advantageous when it comes to the pattern of distribution facilities and rural schools are marginalized in distribution pattern. Based on the findings, it was concluded that pattern of school plant planning differs from one location to another, school facilities have not been equitably distributed to schools, urban schools are more advantageous when it comes to the pattern of distribution facilities and rural schools are marginalized in distribution pattern. The following recommendation were made that there should be equity in distribution of school facilities to schools as a pattern of school plant planning. There should be proper planning of school site, buildings, equipments, transport, furniture, books, electrical infrastructure, water supply infrastructure, accessories relate to students' academic achievement. Educational planners should use the right personnel for school plant planning.

Keywords:

School Plant Planning, Students' Academic Achievements, Nigeria



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Introduction

Education, all over the world, is believed to be the most powerful instrument for national development. The increasing awareness of the prominent role of education in the human, economic, political and socio-cultural development of any nation has led many nations of the world to commit large amount of money to the education of their citizens. This huge investment and expenses in education will only be justified if the goals and objectives of education are achieved in the long-run. The goals of Nigerian education as highlighted in National Policy on Education (FRN, 2013) include: the inculcation of national consciousness and national unity; the inculcation of the type of values and attitudes for the survival of the individual and the Nigerian society; the training of the mind in the understanding of the world around; and the acquisition of appropriate skills and the development of mental, physical and social abilities and competencies as equipment for the individual to live in and contribute to the development of the society.

However, school plant as the totality of all things that make up a school system which include the physical and material facilities such as sitting, buildings, school site, recreational places and all things in the environment that facilitate learning in the school. School plant as the material conditions such as the school building, furniture, playgrounds, hostels, classrooms, school libraries, laboratory, toilet, tables, chairs, internet facilities, electricity, computers, printers, apparatus and equipment's etc.

School plant planning is often considered an essential aspect of educational planning. It therefore behooves that school plant is appropriately planned to facilitate the effectiveness of school system so as to bring about the achievement of educational goals. However, in spite of the importance accorded to school plant planning in realizing educational goals, it seems, it has not been given the adequate attention it deserves especially in developing countries like Nigeria. According to Amanchukwu and Ololube (2015), one of the strongest problems with the Nigerian educational system is the inappropriate school plant planning. In their view, it is worrisome that majority of the schools in our cities and towns are not properly planned in terms of school plants. This ugly situation poses a serious concern to as many that have stake in educational sector of the nation.

A well planned school plant will gear up expected outcomes of education, will facilitate good social, political and economic emancipation; effective teaching, learning and academic performance of students. Therefore it can be said that the school plant is an essential aspect of educational planning because unless schools are well suited, buildings adequately constructed and equipment adequately provided, much teaching and learning may not take place.

Ovie (2017) observed that many secondary schools in Delta State are not properly planned, while the few that were planned have problems or are in obsolescence stages. Several secondary schools have no libraries, and those that had could have been dilapidated. Very few of them have dispensaries for first aid and bed rest, most especially in girls' school where they experience menstruation which required use of sanitary pads. It is hard to find restroom (toilet) in some of the schools, and when the toilets are found, they are in very bad conditions such as improper maintenance and shortage or absence of water.

Properly planned school plant in terms of location, structure and facilities will enhance teaching and learning process. While emphasizing the importance of school plants planning to students' learning outcome, The main objective of school plants planning is to satisfy educational goals which have been pre-determined by educational planners. He emphasized that better planned school plants will enhance better school programmes and the community needs. This provides a place for psychological and physical safety for students and teachers to enhance the good, quality of instruction.

Statement of the Problem

Education is believed to be the bedrock for the development of a nation. In Nigeria today, education is surrounded with challenges and problems that are increasing everyday and jeopardising the system. This could be as a result of poor school site planning, poor instructional space planning, poor administrative space planning, poor space of convenience planning and poor circulation space planning. This becomes obvious when one looks at teachers' productivity and students' academic achievement in both the external and internal examinations.

It is observed that lack of school plant planning could influence teaching and learning which in turn lead to poor students' academic achievement. This ugly situation facing our educational institutions, be it primary, secondary or tertiary needs proper attention. This is because, if school plant are not properly planned it may make teaching and learning to be jeopardized as appropriate learning environment, facilities and tools are not available to students, hence good academic performance and achievement of students may not be guaranteed. For this reason, there is the need for school managers to embark upon the quest to tackle these challenges facing school plant planning.

Research Questions

The following research questions were formulated to guide the study:

1. What is the pattern of school plant planning in public secondary schools in Delta State?
2. What types of school plant planning that relate to students' academic achievements in public secondary schools in Delta State?
3. What are the problems facing school plant planning in public secondary schools in Delta State?
4. What strategies can be adopted to improve school plant planning in public secondary schools in Delta State?

Hypotheses

The following null hypotheses were formulated to guide the study:

1. There is no significant relationship between the pattern of school plant planning and students' academic achievements in public secondary schools in Delta State.
2. There is no significant relationship between the types of school plant planning and students' academic achievements in public secondary schools in Delta State.
3. There is no significant relationship between the problems facing school plant planning and students' academic achievements in public secondary schools in Delta State.
4. There is no significant relationship between the strategies that could be adopted to improve school plant planning and students' academic achievements in public secondary schools in Delta State.

Review

Concept of School Plant

The school plant is a term, which refers to the location of school, the school building and the equipment in the school and other material resources provided in the school for the purpose of enhancing teaching and learning processes. These include, school buildings, classrooms, assembly halls, laboratories and workshop, libraries, teaching aids, and devices, such' as modern educational hardware and software in the form of magnetic tapes, films etcetera. Educational facilities are the material things that facilitate teaching and learning processes in the school (Balogun, 2018).

School plant also includes the site, the building and equipment. It also includes the permanent structures like workshops, libraries, classrooms, laboratories, classrooms, laboratories and semi-permanent structures like machines, laboratory equipment, furniture, chalkboard etc. School plants are made up of the indispensable systems and structures required by any viable educational institution to function effectively and achieve the objectives for which it was established in the first instance (Alimi, Ehinola & Alabi, 2012).

Pattern of School Plant Planning and Students' Academic Achievements

The pattern of distribution of school facilities has been a challenge with many schools from different States in Nigeria (Balogun, 2020). It has been observed that school facilities have not been equitably distributed to schools even when there is evidence of funding of the capital projects. The pattern for equitable distribution of school facilities is a prerequisite to the realization of secondary education goals and objectives. School facilities are veritable tools for educational delivery. The facilities provide a physical environment that is comfortable, safe, secure, accessible, well illuminated, well ventilated, and aesthetically pleasing for the achievement of educational goals.

The school facility is much more than a passive container of the educational process: it is, rather, an integral component of the conditions of learning. Educational facilities are important for the enhancement of effective teaching and learning processes, and the overall functioning of the school system. The contribution of educational facilities to the success of educational programs cannot be overemphasized because they are critical in the educational system. When it comes to the pattern of distribution of school facilities, "equity and equality" are very dissimilar.

The idea of equality indicates if per- students funding at every school should be the same. While equity centers on if less advantageous students should get more to catch up. The students who are the utmost behind- most often are students from the rural areas and they require more of these facilities to catch up, succeed and eventually close the achievement gap. Giving students who come to school lagging academically (because of some factors outside of the school's control) the same facilities as students in the urban areas will not close the achievement gap. But making sure that schools in rural areas have access to exceptional teachers and other facilities they need to succeed will continue to bridge the gap. Ensuring that schools who need more to achieve success receive those facilities and opportunities illustrate equity in action.

The pattern of equitable distribution of school facilities here refers to the allocation of facilities in all school districts, independent of their location. As a principle, Adiele et al. (2017) asserted that equitable distribution advocates equitability in the distribution of and accessibility to all provided learning resources no matter where the school is located. Resource equity refers to the allocation and use of resources (people, time, facilities and money) to create student experiences that enable all children to reach empowering and rigorous learning outcomes no matter where the school is located (Lynch, 2011).

Resource allocation in education does not take place in a vacuum. Instead, it often reflects policy conditions that form a context in which opportunities for effective leadership can be created. For example, effective leaders know how to use data strategically to inform resource allocation decisions and to provide insights about how productivity, efficiency, and equity are impacted by allocated resources. The purposeful and practical allocation of resources to support equitable access to high-quality learning opportunities is a major component of education policy at the federal, state, and local levels (Lynch, 2011). No wonder, the Federal Republic of Nigeria (2013) stated that all secondary schools in the country through adequate planning be provided with adequate facilities. Leaders at all levels of education are charged with making decisions about how to effectively distribute and leverage resources to support teaching and learning.

Equitable distribution ensures that school facilities are appropriately channeled to areas where they are required in the right quality and quantity to avoid over or under-utilization which amounts to wastage. This guarantees effective operation and maintenance of standards in the educational system. This enables all children to reach empowering and rigorous learning outcomes. In this respect, leaders are concerned not only with the level of resources and how they are distributed across districts, schools, and classrooms but also with how these investments translate into improved learning. The provision of educational facilities and the pattern of distribution therefore, cannot be overemphasized.

Akpode (2018) carried out a study on pattern of school plant planning and academic performance in public secondary school in Delta state. The main purpose of the study was to ascertain the pattern of school plant planning adopted by the secondary educational stakeholders and how it influence academic performance. There was three research questions three null hypothesis. The research design was descriptive survey research design. The population of the study was 475 principals and teachers 14,275 from the 25 Local Government Area of Delta State. The sample used for this study is 50 principals and 1050 teachers. The instrument for data collection was questionnaire. Mean and standard deviation were used in answering the research questions. The t-test was used to test the hypothesis. The major findings include: that pattern of school plant planning influence academic performance.

Types of School Plant and Students' Academic Achievements

Contextually in this study, school plant planning refers to the following:

- a) **Instructional Spaces:** These include classrooms, auditorium, gymnasium, library, workshops, laboratory, arts room, home economics rooms, multipurpose rooms/halls, music area and any other space where students receive instruction.
- b) **Administrative Spaces:** These comprise principal's office, clerk's office, staff room, Guidance Counselors' office and Health clinics.
- c) **Circulation Spaces:** These include corridors, lobby, staircases and other spaces where students recreate.
- d) **Spaces for conveniences:** These consist of toilets, cafeteria, kitchen, dormitories, custodian sheds and stores, and
- e) **Accessories:** These include parks, garden, fields, courts and lawns.

Classifying this has caused a great problem to educationist over the years. Some educationist classified it based on location while some also classified them based on their functions. However, Ukaigwe (2018) classified school plant into two namely Movable or Roaming school plants and Immovable or Stationary school plants. Roaming school plants are all the educational facilities that can be moved, carried about or relocated from one place to another (Kpee, 2013). Examples of this type of school plant are chairs, laboratory equipment, audio visual, tables, mobile markers board, books, etc. Stationary school plants are all educational facilities that are permanently built at the school site. They are not movable and cannot be relocated. Examples are the school buildings, playgrounds, fields, workshops, libraries, trees, gardens, lawns and all land property of the school. Agabi (2014) also identified other type of school plant based on their functions. They are—Instructional facilities, Recreational facilities, and general facilities.

- **Instructional facilities:** These are those school plant or facilities that facilitate teaching and learning directly. Examples are—chalk, markers board, seats, laboratories, classrooms, libraries, books, etc.
- **Recreational facilities:** These are the facilities used for sports, games, relaxation, pleasure, and past-times such as lawns, fields, tracks, balls, gymnasium, swimming pools, etc.
- **Residential facilities:** These are the facilities that provide shelter for staff and students. Examples are staff quarters, students' hostels.
- **General Purpose Facilities:** This type of facilities has flexible usage. They can be converted to other use beyond their original usage. They are developed under space facilities.

Challenges of School Plant Planning in Nigeria

The following are the monumental challenges, among other challenges, confronting school plant planning in Nigeria.

Under-funding: The frivolous way and manner in which Nigerian government responds to financial needs of education as witnessed in today's Nigeria, especially judging from the budgetary allocation to the sector, indicates, without doubt, that education is not given a top priority. For instance, in the 2016 budget, the education sector had a total allocation of N369 billion, representing 6.06 percent of the total budget (6.08 trillion). 92% of this amount was allotted to recurrent expenditure like salaries (Efekodo, 2020). It is from the balance of 8% that all the federal universities, polytechnics, colleges of education, secondary schools and primary schools were run. In this circumstance, it would be extremely difficult to procure all the required school plants for all the levels of education with this meager allocation.

Corruption: Most of the public office holders in Nigeria have come to power only for the ulterior motive they stand to gain and not to serve the interest of the masses. They unlawfully dip their hands in the coffers of government, withdraw public funds meant for provision of educational facilities/maintenance of existing ones and fraudulently divert it into personal accounts for their private use (Uvietobore, 2021).

Cultural Problem: Nigeria is an amalgamation of over 300 ethnic groups and each of these ethnic groups has its own unique culture and worldview. The fact remains that these ethnic groups within our country are not only multitudinous but are also distinctly pronounced in culture.

Manpower Problem: Top government functionaries and political class in most cases exert their influence over whom to be appointed as school plant planners without considering and evaluating their suitability, capabilities and cognate experience for the job. Meanwhile, when unqualified educational planners are made to be in charge of planning school plant either at national or at state/grassroots level, there is certainty that the seed of ineffectiveness and inefficiency will germinate in the school system (Solomon, 2019).

Political Problem: Another monumental challenge confronting school plant planning in Nigeria is the frequent change of government and this does not bode well for the smooth implementation of school plant planning.

Administrative Problem: Both technocrats and bureaucrats play a pre-eminent role at the implementation stage of educational planning through the control and operation of governmental administrative machinery (Okafor, 2018).

The Problem of Accessibility to Fund: Acquisition of proper and well-articulated school plants require huge funds. Most of the school proprietors/proprietresses are facing a lot in accessing fund from our financial institutions. Some of these challenges ranging from high interest rate, lack of collateral, lack of surety, etc hamper execution of proper school plant planning among private school owners (Okafor, 2018).

Economic Recession: Due to economic recession that the nation and the world at large are witnessing, the prices of facilities have been skyrocketed in the recent times. This among others makes procurement of these facilities unaffordable by prospective school managers/administrators thereby making them resort to running the school with poor school plants/facilities (Segun, 2021).

Security: Insecurity situation promotes fears, loss of lives and property and time limiting (Anho, 2022).

Government Policies: Government policy becomes a threat when prospective school owners cannot afford what it takes to meet up with such policy.

Ebeledike (2018) investigated challenges of school plant planning in secondary school in Ahaocha Anambra State. The study specifically is to find out the challenges of school plant planning.

Random sampling technique was used for the selection of 200 respondents. Hypotheses were tested with the Pearson product moment correlation coefficient at 0.05 level of significant. Data were analyzed using means and frequency distribution. The researcher found out that the performance of students depends on school plant planning and maintenance.

Strategies to Improve School Plant Planning

This involved the acquisition of land, designing of the building by experts, using the right personnel for the building proper and acquiring of the right equipments. Onwurah 2014, suggested steps to be adopted in school plant planning as follows:

- ❖ Determine the goals, priorities and services to which the facilities are directed in realizing the needs of the community.
- ❖ Establishment of the adequacy of the school site some important questions need to be asked there. Is the average distance of the school from the students and staff homes too long close or moderate.
- ❖ Considerable time should be given to planning of the school curriculum before actual planning or design of building by the architects begins. The architect should not only know the subject targeted but should know what equipment's is needed and how much the student's space and the teachers will need.
- ❖ Creative schools are products of good planning. In supporting this view, Eresimadu (2016) and Ani ((2017) stressed that creative schools do not just happen, therefore, there is the need to involve individuals of different talents to make for healthy safe and comfortable school environment which can promote high standard of academic work in the school.

The functions to be performed by these groups of professionals to make for the uniqueness of the school plant cannot be over emphasized. The educators possess the capacity to determine the building and materials needs of the school, the architect will help to translate these building needs into practical terms through design and specification. The health worker will help in choosing a healthy and safe environment which will form the school site; the artist will help in the location of the trees and choice of colors for the buildings while the economist will ensure that financial resources are judiciously utilized to o use s administrative variable, if properly put to use determines the competence of secondary school principals, (Anho, 2017).

Methodology

This study is a correlational study adopting the *ex-post-facto* research design. The population for this study comprised all public secondary school principals and teachers in Delta State. There are currently 479 public secondary schools in Delta State made up of 479 principals and 14,877 teachers in the twenty five (25) Local Government Areas of Delta State. The sample for this study was 50 principals and 1,490 teachers in Delta State public secondary schools randomly selected from 13 Local Government Areas. This represented 10% of the population while 13 Local Government Areas represent 50% of the 25 Local Government Areas. The sampling procedure used was the stratified random sampling technique. This involved sampling 13 Local Government Areas from twenty-five (25) Local Government Areas. Secondly, 10% of principals and teachers from 13 Local Government Areas sampled were selected resulting to 50 and 1,490 respectively. The sample was random because each principal and teacher had equal chance of being selected.

A questionnaire and a checklist which were self developed by the researcher. The checklist was titled "Students' Academic Achievement Checklist" (SAAC) to obtain information on students' academic achievement using the promotional result of 2021, 2022 and 2023. Secondly, the questionnaire titled 'School Plant Planning and Students' Academic Achievements Questionnaire'

(SPPSAAPQ). The questionnaire contains 44 items in two sections. Thirdly, School Facilities Assessment Checklist.

The instrument was validated and its reliability equally determined via a pilot study using test re-test reliability technique with a coefficient index of 0.85 was used. The researcher administered a total of 1,540 questionnaire to randomly selected principals and teachers from the selected public secondary schools in the study area. Two research assistants was employed and trained to help administer the questionnaire. The researcher employed descriptive statistic of mean scores and standard deviation to provide answers to the research questions while Pearson Product Moment Statistics was used to test the hypotheses at 0.05 level of significance.

Table 1: Mean Scores and Standard Deviation Analysis on Pattern of School Plant Planning

SN	Pattern of School Plant Planning	Mean	SD	Remark
1.	Development of educational programme	3.14	.81	+
2.	Selection of school site	3.04	.75	+
3.	Designing of school plant	2.96	.78	+
4.	Provision of educational resources	3.10	.84	+
5.	Implementation of school curriculum	2.96	.81	+
6.	Proper utilization of educational resources	2.88	.80	+
7.	School plant maintenance	3.16	.79	+
Grand Mean Score		3.03	.79	+

Keys: + = High, - = Low

Data in Table 1 shows mean scores and standard deviation analysis on pattern of school plant planning. The result shows that respondents agreed on all the items with mean scores above 2.50 benchmark for the study.

Table 2: Mean Scores and Standard Deviation Analysis on Types of School Plant Planning

SN	Types of School Plant Planning	Mean	SD	Remark
1.	School site planning influence teaching and learning	3.14	.81	+
2.	Planning of buildings such as classrooms and administrative blocks enhance teaching and learning	2.94	.77	+
3.	Equipment planning such as computers, photocopiers, computer and laboratories boost students' academic achievement.	2.84	.79	+
4.	Transport planning such as school bus enhance teaching and learning	3.04	.88	+
5.	Furniture planning such as desks, bookshelves and office furniture increase students' academic achievement.	2.92	.88	+
6.	Books planning such as textbooks, notebooks, magazines, and atlas influence students' academic achievement	2.96	.81	+
7.	Planning of electrical infrastructure such as air conditioners, electrical fans, generating sets, and other electrical fitting facilitate teaching and learning	3.14	.81	+
8.	Planning of water supply infrastructure such as wells, boreholes and water tanks influence teaching and learning	2.90	.74	+
9.	Planning of school plant accessories, playgrounds, lawns, car park, gardens and farms boost students' academic	2.86	.78	+

	achievement			
Grand Mean Score		2.96	.80	+

Keys: + = High, - = Low

Data in Table 2 shows mean scores and standard deviation analysis on types of school plant planning that relate to students' academic achievements in public secondary schools in Delta State. The result shows that respondents agreed on all the items with mean scores above 2.50 benchmark for the study. Thus, school site planning, planning of buildings, equipment planning, transport planning, furniture planning, books planning, planning of electrical infrastructure, planning of water supply infrastructure, planning of school plant accessories relate to students' academic achievement.

Table 3: Mean Scores and Standard Deviation Analysis on Problems Facing School Plant Planning

SN	Problems Facing School Plant Planning	Mean	SD	Remark
1.	Under-funding	3.16	.74	+
2.	Corruption	2.96	.90	+
3.	Cultural problem	2.84	.79	+
4.	Manpower problem	3.04	.88	+
5.	Political problem	2.92	.88	+
6.	Administrative problem	2.96	.81	+
7.	The problem of accessibility to fund	2.78	.79	+
8.	Economic recession	2.98	.82	+
9.	Government policies	2.94	.89	+
Grand Mean Score		2.96	.83	+

Keys: + = High, - = Low

Data in Table 3 shows mean scores and standard deviation analysis on problems facing school plant planning in public secondary schools in Delta State. The result shows that respondents agreed on all the items with mean scores above 2.50 benchmark for the study. Thus, under-funding, corruption, cultural problem, manpower problem, political problem, administrative problem, the problem of accessibility to fund, economic recession and government policies are problems facing school plant planning.

Table 4: Mean Scores and Standard Deviation Analysis on Strategies can be Adopted to Improve School Plant Planning

SN	Strategies can be Adopted to Improve School Plant Planning	Mean	SD	Remark
1.	Using the right personnel for school plant planning	2.98	.82	+
2.	Implementing of school plant planning policies	3.08	.78	+
3.	Determine the goals	3.22	.79	+
4.	Establishment of the adequacy of the school site	2.23	.65	-
5.	Considerable time should be given to planning	2.45	.70	-
6.	Involve individuals of different talents	2.80	.78	+
7.	Involve an educator and economist	2.84	.79	+

Grand Mean Score	3.02	.79	+
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Keys: + = Agree, - = Disagree

Data in Table 4 shows mean scores and standard deviation analysis on strategies can be adopted to improve school plant planning in public secondary schools in Delta State. The result shows that respondents agreed on four (4) items 1, 2, 3, 6 and 7 with mean scores above 2.50 benchmark and rated low on one (1) item 4 and 5 with mean score below 2.50 benchmark for the study. Thus, the following are strategies can be adopted to improve school plant planning, using the right personnel for school plant planning, implementing of school plant planning policies, determine the goals, involve individuals of different talents and involve an educator and economist are strategies can be adopted to improve school plant planning.

Table 5: Pearson “r” on Pattern of School Plant Planning and Students’ Academic Achievements

Variables	N	X	DF	r-Cal.	r-Crit.	Level of Sign	Decision
Pattern of School Plant Planning	1540	2.91	1525	0.132	0.061	0.05	Significant
Students’ Academic Achievement		2.84					

Data in Table 5 revealed Pearson product moment correlation coefficient analysis on pattern of school plant planning and students’ academic achievements. The mean was 2.91 and 2.84 for pattern of school plant planning and students’ academic achievements respectively. The calculated r - value was 0.132 while the critical r-table value was 0.061 with DF of 1525 at 0.05 level of significance. Since the calculated r - value was greater than the critical r-table value, the null hypothesis is rejected. Thus, there is a significant relationship between the pattern of school plant planning and students’ academic achievements in public secondary schools in Delta State.

Table 6: Pearson “r” on Types of School Plant Planning and Students’ Academic Achievements

Variables	N	X	DF	r-Cal.	r-Crit.	Level of Sign	Decision
Types of school plant planning	1540	2.77	1525	0.071	0.064	0.05	Significant
Students’ academic achievements		2.84					

Data in Table 6 revealed Pearson product moment correlation coefficient analysis on types of school plant planning and students’ academic achievements. The mean was 2.77 and 2.84 for types of school plant planning and students’ academic achievements respectively. The calculated r - value was 0.071 while the critical r-table value was 0.064 with DF of 1525 at 0.05 level of significance. Since the calculated r - value was greater than the critical r-table value, the null hypothesis is rejected. Thus, there is a significant relationship between the types of school plant planning and students’ academic achievements in public secondary schools in Delta State.

Table 7: Pearson “r” on Problems Facing School Plant Planning and Students’ Academic Achievements

Variables	N	X	DF	r-Cal.	r-Crit.	Level of Sign	Decision
Problems facing school plant planning	1540	2.84	1525	0.045	0.065	0.05	Not Significant
Students’ academic achievements		2.84					

Data in Table 7 revealed Pearson product moment correlation coefficient analysis on the problems facing school plant planning and students’ academic achievements. The mean was 2.74 and 2.84 for the problems facing school plant planning and students’ academic achievements respectively. The calculated r - value was 0.045 while the critical r-table value was 0.065 with DF of 1525 at 0.05 level of significance. Since the calculated r - value was less than the critical r-table value, the null hypothesis is retained. Thus, there is no significant relationship between the problems facing school plant planning and students’ academic achievements in public secondary schools in Delta State.

Table 8: Pearson “r” on Strategies that could be Adopted to Improve School Plant Planning

Variables	N	X	DF	r-Cal.	r-Crit.	Level of Sign	Decision
Strategies to improve School Plant Planning	1540	2.96	1525	0.122	0.075	0.05	Significant
Students’ Academic Achievement		2.84					

Data in Table 8 revealed Pearson product moment correlation coefficient analysis on the strategies that could be adopted to improve school plant planning and students’ academic achievements. The mean was 2.96 and 2.84 for strategies that could be adopted to improve school plant planning and students’ academic achievements respectively. The calculated r - value was 0.122 while the critical r-table value was 0.075 with DF of 1525 at 0.05 level of significance. Since the calculated r - value was greater than the critical r-table value, the null hypothesis is rejected. Thus, there is a significant relationship between the strategies that could be adopted to improve school plant planning and students’ academic achievements in public secondary schools in Delta State.

Discussion of Findings

Findings showed that pattern of school plant planning and students’ academic achievement includes; pattern of school facilities differs from one location to another, school facilities have not been equitably distributed to schools, urban schools are more advantageous when it comes to the pattern of distribution facilities, rural schools are marginalized in distribution pattern. The hypothesis tested revealed that there is a significant relationship between the pattern of school plant planning and students’ academic achievements in public secondary schools in Delta State. This is in line with Adiele et al. (2017) asserted that equitable distribution advocates equitability in the distribution of and accessibility to all provided learning resources no matter where the school is located.

Findings revealed that types of school plant planning relate to students' academic achievements. The hypothesis tested revealed that there is a significant relationship between the types of school plant planning and students' academic achievements in public secondary schools in Delta State. This is in line with Oyosola (2017) school plant enhances better school programmes and the community needs by providing a place for psychological and physical safety for students and teachers.

Findings showed that problems facing school plant planning such as under-funding, corruption, cultural problem, manpower problem, political problem, , administrative problem, the problem of accessibility to fund, economic recession, government policies. The hypothesis tested revealed that there is no significant relationship between the problems facing school plant planning and students' academic achievements in public secondary schools in Delta State. This in line with Uvietobore (2021) most of the public office holders in Nigeria have come to power only for the ulterior motive they stand to gain and not to serve the interest of the masses.

Findings revealed that strategies adopted to improve school plant planning such as using the right personnel for school plant planning, implementing of school plant planning policies, determine the goals, establishment of the adequacy of the school site, considerable time should be given to planning, involve individuals of different talents, involve an educator and economist. The hypothesis tested revealed that there is a significant relationship between the strategies that could be adopted to improve school plant planning and students' academic achievements in public secondary schools in Delta State. This in line with Onwurah (2014) strategies that can be adopted to improve school plant planning involved the acquisition of land, designing of the building by experts, using the right personnel for the building proper and acquiring of the right equipments.

Conclusion

Based on the findings it therefore concluded that school plants planning has a significant impact on students' academic achievement. A well-planned school plant can create a conducive learning environment, improve student engagement and motivation, enhance teacher effectiveness, boost student achievement and academic success and support students' physical, social and emotional development.

Recommendations

Based on the findings, the researcher recommended the following:

1. There should be equity in distribution of school facilities to schools as a pattern of school plant planning.
2. There should proper planning of school site, buildings, equipments, transport, furniture, books, electrical infrastructure, water supply infrastructure, accessories relate to students' academic achievement.
3. Educational planners should use the right personnel for school plant planning.

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