

MANAGEMENT OF SCHOOL FACILITIES AND STUDENTS' LEARNING OUTCOME IN PUBLIC SECONDARY SCHOOLS IN DELTA STATE.

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Abstract

This study examined management of school facilities and students' learning outcome in public secondary schools in Delta State. Three research questions guided the study and three null hypotheses were tested at 0.05 level of significance. Correlational research design was adopted for the study. The population of the study comprised 37,263 SS2 students in public secondary schools in the 25 local government areas of Delta State. Proportionate stratified and simple random sampling procedure was adopted for the study. The instruments for data collection were two sets of questionnaires structured by the researcher tagged; "School Facilities Management Questionnaire (SFMQ)" and "Mathematics Test Questions for SS2 Students". The face validity of the instruments was established by three experts in the Department of Educational Foundations, Faculty of Education, Chukwuemeka Odumegwu Ojukwu University, Igbariam Campus. The construct validity of the instruments was established using Principal Component Analysis approach. Cronbach Alpha procedure was used to determine the internal consistency of the instruments. Pearson Product Moment Correlation Coefficient (PPMC) was used to answer the research questions and test of significance of correlation was used to test hypotheses at 0.05 level of significance. The result of this study showed that there was a positive and significant relationship between management of instructional materials, management of classrooms and SS2 students' learning outcome in mathematics in public secondary schools in Delta State. There is no significant relationship between management of information and communication technology (ICT) and SS2 students' learning outcome in mathematics in public secondary schools in Delta State. It was recommended among others that Principals should ensure that appropriate instructional materials are used by teachers and a safe place should be provided for keeping and archiving them.

Keywords: Management, School Facilities, Learning Outcome.

Introduction

The transformation of societies is dependent on education. In Nigeria just as in other countries of the world, there is increasing emphasis on improving schools so that young people in the schools be equipped with quality knowledge and skills to function effectively in life (Ohamobi, 2019). This means that education is vital for individual as well as national development. Education in the generic sense is a form of learning and learning on the other hand is the process of gaining new knowledge, skills, values and attitudes which shape the behaviour of the learner. Kumari (2022) defined learning as a continuous process of knowing about new things and gaining new experiences in life. Students are learners in public secondary schools which is the focus of this study. Students' learning outcome can be determined by subjecting students to test or examination process in order to know the extent of the assimilation of the instruction delivered. It is vital to determine the level of learning by students from time to time through examinations. Adekale cited in Udebuana and Onwugbufo (2021) defined students' learning outcome as result gotten from the assessment of each student's skills and knowledge content, both in general and specific area of study. Students' learning outcome is a tool for ascertaining the quality of instruction acquired students. Operationally students' learning outcome is the degree to which learning objectives have been achieved by students after the teaching and learning process within a stipulated time. Students'

learning outcome can be ascertained by making them to write tests, assignments, internal and external examinations.

Despite all the efforts of the Delta State Government in the provision of amenities to see that students' learning outcome is enhanced, yet, observation by the researcher as a teacher and member of executive in some public secondary schools in Delta State showed that students' learning outcome remain poor. Some students move about when they are supposed to be in the classes, some hardly pay attention when the lesson is going on, some find it difficult to write examinations without cheating among others. In line with this, report from other scholars also indicated that students' learning outcome in public secondary schools in Delta State is poor. Study by Gegeleso and Ayodele (2023) revealed that students' learning outcome in secondary school in Delta State is below average. A fall in students' learning in public examinations have been reported (Ayeni, 2017). Students' learning outcome in this study will be ascertained using Mathematics test score that will be administered to selected SSII students in some public secondary schools in Delta State. The choice of Mathematics as the subject for this study is because it is one of the compulsory courses required by senior secondary school students for gaining admission into higher institutions of learning.

The question is; what could be the cause of poor students' learning outcome in public secondary schools in Delta State? Selbing and Olsson (2019) pointed out that factors which contribute to high students' learning outcome include; active engagement, student assessment, community and parental involvement, cultural values and ethical values, and physical facilities. Maduagwu cited in Uwalaka et al. (2021) maintained that students' learning outcome could be a determinant by adequate management of school facilities. To achieve learning outcome, students must have access to necessary information, material and resources through the library services and this resources might be in tangible (printed) intangible (electronic resource) format (Ezeugoh, et al 2020, Ntui & Udah 2015) learning. This means that the poor students' learning outcome could be attributed to inadequate management of school facilities among others. The researchers are worried and it is based on this backdrop that this study examined management of school facilities and learning outcome in public secondary schools in Delta State Nigeria.

There are different definitions of management given by different scholars. Management involves the arrangement of available human and material resources for the achievement of goals. (Osegbue et al, 2018). it involves developing a formal structure of carrying duties within the organization in order to achieve the stated goals and objective of the school. Agogbua in Ohamobi & onyekazi (2024) sees management as the transforming of the available resources in an organization which may be human, material, time, technology into desired outputs and interests of the organizations and stake holders through the role of planning, organizing, staffing, coordinating and controlling. Management is a distinct process consisting of planning, organizing, actuating and controlling performed to determine and accomplish the objectives by the use of people and resources (Terry, 2023). In other words, management is the combination of different resources by the manager for the achievement of organizational objectives. This study defined management as the effective utilization of human and material resources available in an organization for the achievement of the organizational goal.

The accomplishment of education goals lies mostly on the hands of the principal who is the manager. Principal as the chief administrator at the secondary school level of education are entrusted with many responsibilities such as developing standard curricular, assessing teaching methods, monitoring students achievements, encourage parents involvement in the school, revise policies and procedures, administer the budget, hire and evaluate staff and oversee facilities (Ohamobi et al, 2021). This indicates that invariably, principals are in charge of all the management activities at secondary schools. The school principal is supposed to play a major role in improving the quality of teaching and learning, ensuring satisfactory standard in the maintenance of school plant, application of modern supervision techniques which is the combination of skills in human relation and in improving quality instruction so as to ensure that all activities are channeled towards the realization of school goal and objectives. (Ohamobi & onyekazi, 2021). Principals need to perform certain functions for effective management of school which includes but not limited to; students' management, financial management, staff management, management of school facilities (Akpan, 2022). Schools facilities are all the non-human resources used in the school to enhance learning. Chatwin (2022) opined that school facilities are physical resources vital for the educational process such as various buildings and materials. In other words, school facilities are materials or structures in which the school use in carry out its activities. This study defined school facilities as materials, equipment and buildings used in the school to promote teaching and learning. Onyekazi (2021)

opined that school facilities includes all the material resources which could be permanent or semi-permanent hardware such as equipment, buildings or software such as computer assisted instruction and programmes which enhance teaching and learning in the school.

Management of school facilities is a measure of how the facilities provided in the school by the government and well-meaning individuals are made available by principals and used by teachers in the teaching and learning process. Ezenwafor et al. (2017) asserted that management of school facilities involves the effective usage of the facilities to achieve desirable outcomes. Proper management of school facilities could elongate the live span of such facility and also boost productivity. This study defined management of school facilities as the planning, controlling of usage, safe keeping of available school facilities, the repair and replacement of damaged ones. It is therefore necessary to identify the aspect of school facilities that needs to be managed from time to time and to ensure adequacy and realization of school objectives. In this study, management of school facilities were delimited to: management of instructional materials, management of classrooms, management of information and communication technology (ICT), and students' learning outcome in public secondary schools in Delta State.

Management of instructional material involves adequate utilization and maintenance of teaching and learning materials so as to promote learning. Instructional materials are crucial in the teaching and learning process in the school. Abubakar (2020) defined instructional material as any device used by teachers to facilitate teaching and learning process. It means that instructional materials promote teaching and learning. Teachers need to use instructional materials to arouse interest in learning. Faize and Dahan cited in Bukoye (2018) maintained that instructional materials are print and non-print items that are designed to impact information to students in the educational process which include such as prints, textbooks, magazines, newspapers, slides, pictures, workbooks, electronic media, among others. Instructional materials are tools used by the teachers to make learning look real and understandable by students (Obuakor, 2019). It means that instructional materials help students to have a deeper understanding of concepts. This study sees instructional material as those teaching materials whether printed or not printed that enhances teaching and learning which includes pictures, charts, magazines, workbook, textbooks, slides, online materials, multimedia, simulations, educational games etc.

Instructional materials as important tools for learning need to be properly managed for effective teaching and learning. It ensure active participation of students and teachers in the classroom thereby enhancing students' engagement during learning, hence its management is essential. Muhammad (2020) pointed that instructional materials has significant impact on students' learning but there is inadequate instructional materials in some schools and the available ones are poorly managed. Management of instructional materials involves ensuring that the right instructional materials are used by teachers to ensure that students understand lesson very well and that they are kept in safe places after use. This study defined management of instructional materials as the safe keeping and proper utilization of instructional materials. These instructional materials could be kept in the library, staffroom or classrooms and management of those facilities especially classroom is also imperative.

Management of Classrooms is way of securing, maintaining and repairing rooms where students and teachers stay for teaching and learning to take place. Yikarebogha et al. (2022) defined classroom as the meeting point of students and teachers. They provide shelter for students, staff and other learning materials thereby enhancing teaching and learning. Onyekazi et al. (2022) defined classroom as a learning space secured with a wall and roof or without a wall and a roof with a teacher who gives instruction and direction to students in order for them to acquire knowledge. This study defined classroom as building or meeting place for students and teachers for the purpose of teaching and learning.

The classroom is the space in the school for instructional delivery, interaction by students and teachers and managing of the interaction by teachers during formal teaching and learning process. Wiseman and Hunt (2018) asserted that effective learning could be dependent on the proper management of classrooms. Classroom management by teachers includes; improved lesson preparation, clarity of lesson presentation, emphasizing on important concepts through the use of instructional materials, building enthusiasm in students during instructional delivery, summarizing key points and learning objectives (Amemtenaam & Nwogu, 2023). The teacher may not carryout these classroom management function if the classroom is a shadow of itself. Observation showed that the interior of some classrooms in public secondary schools in Delta State are not conducive for learning. Some of them are without seat, some are overcrowded making it difficult for the teacher to control the students during teaching and learning. Some classrooms are always dirty with leaking roof, without adequate windows for ventilation, lack security

making it difficult for students' learning to be effective Yikarebogha et al. (2022). Classroom aims to provide an enabling and well sheltered environment where students acquire knowledge in order to be useful members of the society.

Classrooms which provide shelter and comfort for teachers and students are vital school facility which needs to be managed properly. Classroom management involves the organization and control of classroom for effective teaching and learning. Omenka and Otor in Ezeugbor et al. (2019) maintained that classroom management is the process of creating favourable conditions to facilitate instructions as well as regulating social behaviour of students. This study defined classroom management as planning, arrangement and care of the classroom to ensure that it is convenient for teaching and learning. Onyekazi et al. (2022) asserted that a classroom that is not conducive and sizeable might hinder teaching and learning. For a classroom to be conducive for teaching and learning there should be adequate sitting arrangement, good lighting and ventilation among others. Principals play major roles in ensuring that leaking roofs, damaged doors and windows are replaced and repaired on time. Amanchukwu cited in Onyekazi et al. (2022) pointed out some schools still have overcrowded classrooms with leaking roofs and gaping hole for windows, unreadable whiteboards instead of chalkboards, no visual aids or wall posters and teaching materials. Interaction in the classroom in this modern dispensation needs usage of information and communication technology (ICT) and its management.

Information and communication technology (ICT) is an important facility in the school. Okoro cited in Ogbunugwor et al. (2019) defined Information and communication technology (ICT) as a means of accessing or receiving, storing, transferring, processing and sending ideas as well as perception of information through computer and other communication facilities. Manafa et al(2022) sees ICT as a variety of modern technologies used for extracting, sharing, editing, collecting, communicating retrieving and sending information in different ways. ICT facilities is a broad term which encompasses radio, television, the Internet and the Web, satellite and Wi-Fi systems, mobile telephony, computer hardware and software, audio- and video-conferencing, virtual reality, social media, wikis, 3D printers and so on (UNESCO, 2017). It is tools that are used in producing, organizing and distributing information. Information and communication technology (ICT) helps to stimulate curiosity and boost self confidence in learners. Observation showed that some public secondary schools in Delta State do not have enough Information and communication technology (ICT) gadgets and it is more worrisome to note that even the available ones are not properly managed. Principals in some public secondary schools in Delta State do not maintain the available information and communication technology (ICT) gadgets, some of them are not functional and some have not been used for a very long time judging from the dirt and dust on them. It should be noted that the use of information and communication technology (ICT) gadgets in schools could help students to understand and retain lessons easily.

Statement of the problem

The issue of students' poor learning outcome remains an eye-sore within the context of public secondary schools in Delta State. Observation showed that students' learning outcome in some public secondary schools in Delta State is poor despite the efforts by the Delta State government to enhance teaching and learning. This situation could be attributed to many factors such as; stress, family influence, poor students study habit, unavailability of enough teachers, the leadership style of the principal, the reward system, inadequate school facilities, improper management of school facilities by principals among others. Poor students' learning is a serious cause of concern because if the learning outcome continues to dwindle, it will affect the school, families, societies and the nation at large. Therefore there is crucial need to ensure high level of learning outcome among public secondary school students in Delta State. Furthermore, students' poor learning outcome have often been attributed to factors such as: family background, inadequate professional teachers, inadequate funding, leadership style of the principal, negative learning attitude of students, reward system among others. It is in view of this that this study examined management of school facilities of instructional material, classroom and information and communication technology (ICT), as it relates to students' learning outcome in public secondary schools in Delta State.

Purpose of the Study

The main purpose of this study is to examine school facilities management and SS2 students' learning outcome in mathematics in public secondary schools in Delta State. Specifically, the study sought to:

1. examine the relationship between management of instructional materials and SS2 students' learning outcome in mathematics in public secondary schools .
2. determine the relationship between management of classrooms and SS2 students' learning outcome in mathematics in public secondary schools .
3. verify the relationship between management of information and communication technology (ICT) and SS2 students' learning outcome in mathematics in public secondary schools .

Research Questions

The following research questions guided the study:

1. What is the relationship between management of instructional materials and SS2 students' learning outcome in mathematics in public secondary schools?
2. What is the relationship between management of classrooms and SS2 students' learning outcome in mathematics in public secondary schools?
3. What is the relationship between management of information and communication technology (ICT) and SS2 students' learning outcome in mathematics in public secondary schools?

Hypotheses

The following null hypotheses tested at 0.05 level of significance guided the study .

1. There is no significant relationship between management of instructional materials and SS2 students' learning outcome in mathematics in public secondary schools in Delta State.
2. There is no significant relationship between management of classrooms and SS2 students' learning outcome in mathematics in public secondary schools in Delta State.
3. There is no significant relationship between management of information and communication technology (ICT) and SS2 students' learning outcome in mathematics in public secondary schools in Delta State.

Method

This study adopted correlational research design. The population of this study consisted of 37,263 SS2 students in public secondary schools in the 25 local government areas of Delta State. Two instruments structured by the researcher tagged; was used for data collection. School Facilities Management Questionnaire (SFMQ)" and "Mathematics Test Questions for SS2 Students". The study was guided by three research questions and three null hypotheses tested at 0.05 level of significant. This instrument is made up of two sections named section A and B. Section A contains the bio-data of the respondents while Section B contains item statements which were used to elicit information on management of school facilities from the respondents. It consisted of three clusters. Cluster A contains 10 items on management of instructional materials, Cluster B contains 10 items on management of classroom, Cluster C contains 10 items on management of information and communication technology (ICT). The items are placed on a 4-point scale of Strongly Agree (SA), Agree (A), Disagree (D), Strongly Disagree (SD). The range of scores were weighted as 4, 3, 2 and 1 respectively. The second instrument is in Section C. It is named "Mathematics Test Questions for SS2 Students". This instrument was used to get the test scores of SS2 students in mathematics. The face validity of the instruments was established by three experts; two in Educational Management and one in Measurement and Evaluation. All the three experts are lecturers in the Department of Educational Foundations, Faculty of Education, Chukwuemeka Odumegwu Ojukwu University, Igbariam Campus. Construct validity of the instrument was explored using Principal Component Analysis Approach. The Cronbach Alpha statistics was used to determine the reliability of the instruments. The average reliability coefficient showed a value of 0.716 with this, the instrument is considered adequate for the study. Pearson Product Moment Correlation Coefficient (PPMC) was used to answer the research questions and test of significance of correlation was used to test hypotheses at 0.05 level of significance.

Results

Research Questions 1: What is the relationship between management of instructional materials and SS2 students' learning outcome in mathematics in public secondary schools in Delta State?

Table1: Pearson(r) of the relationship between management of instructional materials and SS2 students' learning outcome in mathematics in public secondary schools in Delta State.

Sources of variation		Management of instructional materials	SS2 students' learning outcome in mathematics	Remark
Management of instructional materials	Pearson (r) N	1.00 538	0.690 ^{xx} 538	High positive relationship
SS2 students' learning outcome in mathematics	Pearson (r) N	0.690 ^{xx} 538	1.00 538	

^{xx}(0.690) = high positive relationship

Pearson (r) revealed in Table 1 showed positive relationship between management of instructional materials and SS2 students' learning outcome in mathematics in public secondary schools in Delta State. The finding in Table 1 revealed that Pearson (r) value of 0.690 was obtained. This implied a high positive relationship ($r = 0.690$, $N = 538$) between management of instructional materials and SS2 students' learning outcome in mathematics in public secondary schools in Delta State.

Research Questions 2: What is the relationship between management of classrooms and SS2 students' learning outcome in mathematics in public secondary schools in Delta State?

Table 2: Pearson (r) of the relationship between management of classrooms and SS2 students' learning outcome in mathematics in public secondary schools in Delta State.

Sources of variation		Management of classrooms	SS2 students' learning outcome in mathematics	Remark
Management of classrooms	Pearson (r) N	1.00 538	0.789 ^{xx} 538	High positive relationship
SS2 students' learning outcome in mathematics	Pearson (r) N	0.789 ^{xx} 538	1.00 538	

^{xx}(0.789) = high positive relationship

As can be seen, result from Table 2 revealed the Pearson (r) of relationship between management of classrooms and SS2 students' learning outcome in mathematics in public secondary schools in Delta State. The result in Table 2 indicated that Pearson (r) value of 0.789 was obtained. This deduced that management of classrooms had a high positive relationship with SS2 students' learning outcome in mathematics in public secondary schools in Delta State.

Research Questions 3: What is the relationship between management of information and communication technology (ICT) and SS2 students' learning outcome in mathematics in public secondary schools in Delta State?

Table 3: Pearson (r) of the relationship between management of information and communication technology (ICT) and SS2 students' learning outcome in mathematics in public secondary schools in Delta State.

Sources of variation		Management of information and communication technology (ICT)	SS2 students' learning outcome in mathematics	Remark
Management of information and communication technology (ICT)	Pearson (r) N	1.00 538	0.285 ^{xx} 538	Low positive relationship
SS2 students' learning outcome in mathematics	Pearson (r) N	0.285 ^{xx} 538	1.00 538	

^{xx}(0.285) = low positive relationship

Table 3 displayed the Pearson (r) of relationship between management of information and communication technology (ICT) and SS2 students' learning outcome in mathematics in public secondary schools in Delta State. The result in Table 3 depicted that Pearson (r) value of 0.285 was obtained. This concluded a low positive relationship between management of information and communication technology (ICT) and SS2 students' learning outcome in mathematics in public secondary schools in Delta State.

Test of Hypotheses

Hypothesis 1: There is no significant relationship between management of instructional materials and SS2 students' learning outcome in mathematics in public secondary schools in Delta State.

Table 4: Test of significance of correlation between management of instructional materials and SS2 students' learning outcome in mathematics in public secondary schools in Delta State.

Sources of variation		Management of instructional materials	SS2 students' learning outcome in mathematics	Decision
Management of instructional materials	Pearson (r) sig. (2-tailed) N	1.00 538	0.690 ^{xx} 0.007 538	Significant
SS2 students' learning outcome in mathematics	Pearson (r) sig. (2-tailed) N	0.690 ^{xx} 0.007 538	1.00 538	

^{xx}correlation is significant at the 0.05 level (2-tailed).

Analysis from Table 4 indicated that the correlation between management of instructional materials and SS2 students' learning outcome in mathematics in public secondary schools in Delta State was 0.690 with a probability value of 0.007 which was less than 0.05 level of significance. Since, the p-value of 0.007 was less than 0.05 alpha level, the null hypothesis no significant relationship between management of instructional materials and SS2 students' learning outcome in mathematics in public

secondary schools in Delta State was rejected ($r, 538 = 0.690$, $p\text{-value} = 0.007$). This indicated that there is significant relationship between management of instructional materials and SS2 students' learning outcome in mathematics in public secondary schools in Delta State

Hypothesis 2: There is no significant relationship between management of classrooms and SS2 students' learning outcome in mathematics in public secondary schools in Delta State.

Table 5: Test of significance of correlation between management of classrooms and SS2 students' learning outcome in mathematics in public secondary schools in Delta State.

Sources of variation		Management of classrooms	SS2 students' learning outcome in mathematics	Decision
Management of classrooms	Pearson (r) sig. (2-tailed) N	1.00 538	0.789 ^{xx} 0.002 538	Significant
SS2 students' learning outcome in mathematics	Pearson (r) sig. (2-tailed) N	0.789 ^{xx} 0.002 538	1.00 538	

^{xx} correlation is significant at the 0.05 level (2-tailed).

Table 5 showed that the p-value of management of classrooms and SS2 students' learning outcome in mathematics in public secondary schools in Delta State was 0.002. The p-value of 0.002 indicated that it was less than 0.05 level of significance, hence the null hypothesis was rejected ($r, 538 = 0.789$, $p\text{-value} = 0.002$). Nevertheless, there is a significant relationship management of classrooms and SS2 students' learning outcome in mathematics in public secondary schools in Delta State

Hypothesis 3: There is no significant relationship between management of information and communication technology (ICT) and SS2 students' learning outcome in mathematics in public secondary schools in Delta State.

Table 6: Test of significance of correlation between management of information and communication technology (ICT) and SS2 students' learning outcome in mathematics in public secondary schools in Delta State.

Sources of variation		Management of information and communication technology (ICT)	SS2 students' learning outcome in mathematics	Remark
Management of information and communication technology (ICT)	Pearson (r) sig. (2-tailed) N	1.00 538	0.285 ^{xx} 0.458 538	Not Significant
SS2 students' learning outcome in mathematics	Pearson (r) sig. (2-tailed) N	0.285 ^{xx} 0.458 538	1.00 538	

^{xx} correlation is not significant at the 0.05 level (2-tailed).

Table 6 portrayed that the correlation between management of information and communication technology (ICT) and SS2 students' learning outcome in mathematics in public secondary schools in Delta State was 0.285 with a probability value of 0.458 which was greater than 0.05 level of significance. Since, the p-value of 0.458 was greater than 0.05 alpha level, hence the null hypothesis of no significant relationship between management of information and communication technology (ICT) and SS2 students' learning outcome in mathematics in public secondary schools in Delta State was not rejected ($r, 538 = 0.285, p\text{-value} = 0.458$). However, there is no significant relationship between management of information and communication technology (ICT) and SS2 students' learning outcome in mathematics in public secondary schools in Delta State

Discussion

Relationship Between Management of Instructional Materials and SS2 Students' Learning Outcome in Mathematics in Public Secondary Schools in Delta State.

Result in Table 1 showed Pearson (r) 0.690 which indicated a high positive relationship between management of instructional materials and SS2 students' learning outcome in mathematics in public secondary schools in Delta State. Testing the null hypothesis 1 which was presented in Table 6 revealed that the p-value of 0.007 was less than 0.05 alpha level which indicated that the null hypothesis of no significant relationship between management of instructional materials and SS2 students' learning outcome in mathematics in public secondary schools in Delta State was rejected ($r, 538 = 0.690, p\text{-value} = 0.007$) because there is a significant relationship between management of instructional materials and SS2 students' learning outcome in mathematics in public secondary schools in Delta State. Research carried out by Abubakar (2020) studied how instructional materials improve learning outcome of physics in some selected secondary schools in Sokoto State, Nigeria. Senior secondary school students from three schools were used for the study, the schools were having a total of 2850 students. Students and teachers were involved in the study. The study used descriptive survey method and percentages were used in analyzing the research questions. Further analysis and interpretation of the data revealed that there is inadequate instructional materials and few physics teachers in Sokoto uses instructional materials in teaching which has impact on the level of performance of the students.

This finding is in line with the findings of Ali et al. (2020) which revealed that between availability and management of instructional materials and students' learning outcome in senior secondary schools. The finding also supports the findings of Bukoye (2019) which revealed that inappropriate utilization of instructional materials as tools for effective students' learning results to high rate of students' failure in external examinations. In the same vein this result supported that of Amos et al. (2022) who found out that instructional materials boost students' cognitive abilities and arouse their interest in the lesson by helping them to reason critically during teaching and learning. Even though the studies were not carried out in the same year, they still gave similar result. This means that instructional materials play significant roles in determining students' learning outcome because it helps them to have deeper and clearer understanding of the subject matter for improved learning outcome.

Relationship Between Management of Classrooms and SS2 Students' Learning Outcome in Mathematics in Public Secondary Schools in Delta State.

The result in Table 2 indicated that the Pearson (r) of the relationship between management of classrooms and SS2 students' learning outcome in mathematics in public secondary schools in Delta State was 0.789 which revealed a high positive relationship ($r = 0.789, N = 538$). Testing the null hypothesis 2 which was presented in Table 7 showed that p-value of 0.002 was less than 0.05 probability level which meant that the null hypothesis of no significant relationship management of classrooms and SS2 students' learning outcome in mathematics in public secondary schools in Delta State was rejected ($r, 538 = 0.789, p\text{-value} = 0.002$). However, there is significant relationship between management of classrooms and SS2 students' learning outcome in mathematics in public secondary schools in Delta.

This present finding supported that of Yikarebogha (2023) which revealed a positive and significant relationship between management of classrooms and students' learning effectiveness or outcome. Also, this finding agrees with Wiseman and Hunt (2018), Onyekazi et al. (2022) which maintained that effective learning is positively and significantly related with management of classrooms. In other words, enhanced learning outcome could be dependent on the proper management of classrooms. Students might not gain inspiring learning experience if the classroom is not conducive and not properly managed. Moreover student taught in conducive environment with adequate facilities will always have

good academic performance without external help or getting involved in examination malpractice(Okafor et al,2021)

Relationship Between Management of Information and Communication Technology (ICT) and SS2 Students' Learning Outcome in Mathematics in Public Secondary Schools in Delta State.

Findings from Table 3 revealed that the Pearson (r) of the relationship between management of information and communication technology (ICT) and SS2 students' learning outcome in mathematics in public secondary schools in Delta State was 0.285 which indicated a low positive relationship ($r = 0.285$, $N = 538$). Result from the test of the null hypothesis 3 which was presented in Table 8 revealed that p-value of 0.458 was greater than 0.05 level of significance which showed that the null hypothesis of no significant relationship between management of information and communication technology (ICT) and SS2 students' learning outcome in mathematics in public secondary schools in Delta State was not rejected ($r, 538 = 0.285$, $p\text{-value} = 0.458$). This meant that there is no significant relationship between management of information and communication technology (ICT) and SS2 students' learning outcome in mathematics in public secondary schools in Delta State.

This finding does not support that of Mensah et al. (2023) which revealed a significant relationship between usage and management of information and communication technology (ICT) and students' learning outcome. The reason for the dissimilarity could be because of the difference in the geographical location of the studies and the difference in the system of management of the schools in Ghana and Nigeria. The finding maintained that use of information and communications technology in schools has the capacity to enhancing teaching and learning. Similarly Onuselogu et al (2017) emphasized that the quality of students learning will be enhanced through their access to the needed content through ICT facilities. It arranges instruction in such a way that learning is facilitated, help the learner to interact individually or in a group for learning to take place, easy delivery of a lesson by the teacher faster and better, broaden students knowledge and level of understanding (Enwereji,et al,2022). This disparity of the finding with this present study could be the gap in the period of conducting the study.

Conclusion

Based on the findings, it was concluded that management of instructional materials and management of classrooms had high positive relationship with SS2 students' learning outcome in mathematics in public secondary schools in Delta State. Management of information and communication technology (ICT) had low positive relationship with and SS2 students' learning outcome in mathematics in public secondary schools in Delta State. There is a significant relationship between management of instructional materials, management of classrooms and SS2 students' learning outcome in mathematics in public secondary schools in Delta State., However, there is no significant relationship between management of information and communication technology (ICT), and SS2 students' learning outcome in mathematics in public secondary schools in Delta State. Conclusively, Proper management of instructional materials, classrooms would enhance students learning outcome in public secondary schools in Delta State for the achievement of education goals.

Recommendations

Based on the findings, the following recommendations were made;

1. Principals should ensure that appropriate instructional materials used by teachers during instructional delivery are in a safe place or kept in archive. Old and worn out instructional materials should be replaced periodically.
2. Principals should seek support from PTA, old students association, the host community, stakeholders among other to augment funds provided by the government for proper management of classrooms and even construction of new ones to ensure that classrooms are not overcrowded for effective teaching and learning classrooms in public secondary schools.
3. Government should organize periodic training programmes for principals on the importance of proper management of school facilities for effective teaching and improved learning outcome in public secondary schools.

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