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Original Research Article

AVAILABILITY AND ADEQUACY OF SCHOOL INFRASTRUCTURE FOR EFFECTIVE ADMINISTRATION OF PRIVATE SECONDARY SCHOOLS IN RIVERS STATE

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ABSTRACT: This study examined the availability and adequacy of school infrastructure for effective administration of private secondary schools in Rivers State. The study adopted a descriptive survey research design because it enabled the researcher to obtain information from respondents without manipulating any variable. The population of the study consisted of administrators and teachers in registered private secondary schools in Rivers State. A stratified random sampling technique alongside simple random sampling was used to select 220 respondents for the study, out of which 198 questionnaires were successfully retrieved and analyzed. Data were collected using a structured instrument titled "Availability and Adequacy of School Infrastructure for Effective Administration Questionnaire (AASIEAQ)". The questionnaire measured dimensions of school infrastructure such as classroom facilities, laboratories, and ICT facilities, alongside indicators of effective administration. The instrument was validated by experts in Educational Management and Measurement and Evaluation, while reliability was established through Cronbach's Alpha, which yielded a coefficient of .870. Mean and standard deviation were used to answer the research questions, while independent t-test was used to test the hypotheses at .05 level of significance. The findings revealed that classroom facilities, laboratories, and ICT facilities significantly influenced effective administration of private secondary schools in Rivers State. The study concluded that the availability and adequacy of school infrastructure enhance administrative effectiveness and promote smooth school operations. It was recommended that proprietors and school administrators should provide adequate infrastructural facilities and maintain existing ones to ensure effective administration in private secondary schools.

Keywords: Availability, Adequacy, School Infrastructure, Classroom Facilities, Laboratories, ICT Facilities, Effective Administration, Private Secondary Schools.

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BACKGROUND TO THE STUDY

Education remains one of the most important instruments for social, economic, and technological development in every society because it equips individuals with the knowledge, skills, and values necessary for productive living. The achievement of educational goals in secondary schools depends greatly on the quality of facilities and resources available within the school environment. School infrastructure has therefore become an essential aspect of educational

development because it provides the physical foundation needed for effective teaching, learning, supervision, and administration. School infrastructure refers to the physical facilities and learning resources that support educational activities within the school system. These facilities include classrooms, laboratories, libraries, administrative offices, furniture, electricity supply, water systems, and ICT facilities that create a conducive learning environment for both teachers and students (UNESCO, 2001). The availability and adequacy of such facilities influence the extent to which schools can achieve their educational objectives effectively.

Earthman (2004) maintained that the condition and quality of school facilities have significant effects on students' learning outcomes, teachers' productivity, and administrative effectiveness. Classroom facilities remain one of the most visible and important components of school infrastructure in secondary education. Adequate classrooms with proper ventilation, sufficient lighting, functional furniture, and enough learning space help to create a comfortable and organized environment for learning. Students tend to learn better in classrooms that are safe, spacious, and conducive, while teachers perform more effectively when instructional activities are carried out in suitable environments. Poor classroom conditions such as overcrowding, broken furniture, leaking roofs, and inadequate seating arrangements often create distractions that affect concentration, discipline, and classroom management. Effective school administration also becomes difficult where classroom facilities are insufficient because administrators may struggle to coordinate teaching schedules, supervise learning activities, and maintain orderliness within the school environment.

The importance of infrastructure in secondary education has continued to attract global attention because infrastructure contributes directly to the quality of teaching and learning outcomes. Educational facilities provide opportunities for practical learning, collaboration, innovation, and effective instructional delivery. Laboratories are particularly important in secondary schools because they support the teaching of science-related subjects and help students to acquire practical knowledge and scientific skills. Science education becomes more meaningful when students are exposed to experiments, demonstrations, and practical activities within functional laboratories. Schools with well-equipped laboratories are more likely to promote creativity, critical thinking, and problem-solving abilities among learners. Inadequate laboratories, on the other hand, limit practical exposure and reduce the effectiveness of science teaching in schools. The World Bank (2018) noted that the quality of school infrastructure contributes significantly to educational achievement and the overall effectiveness of school systems.

OECD (2020) emphasized that ICT facilities have become increasingly important in modern educational administration because digital technologies now influence teaching methods, communication systems, and school management practices. ICT facilities such as computers, internet connectivity, projectors, printers, interactive boards, and digital communication systems help schools to improve instructional delivery and administrative efficiency. School administrators utilize ICT facilities for record keeping, data processing, communication with staff and parents, monitoring students' academic progress, and organizing school activities effectively. Teachers also depend on ICT resources to access digital instructional materials and improve students' learning experiences. The growing integration of technology into education has made ICT infrastructure a necessary component of effective school administration and educational development. Inadequate ICT facilities may therefore hinder schools from adapting to current educational demands and technological advancements in the learning process (UNESCO, 2023).

Private secondary schools in Rivers State have continued to expand due to increasing demand for quality education and the growing population of school-age children in the state. These schools complement government efforts in providing access to secondary education and are often perceived as institutions that offer improved discipline, better supervision, and enhanced academic performance. Many parents enroll their children in private schools because of expectations of quality teaching, effective management, and conducive learning environments. Despite this growth, concerns still exist regarding the availability and adequacy of infrastructural facilities in many private secondary schools across Rivers State. Some schools operate with limited classroom space, poorly equipped laboratories, and inadequate ICT facilities, which may negatively affect effective school administration and students' academic experiences. Educational facilities are expected to meet acceptable standards capable of supporting effective curriculum implementation and administrative efficiency.

The link between infrastructure and effective school administration cannot be overlooked because school administrators rely heavily on available facilities to coordinate educational activities successfully. Effective administration involves planning, supervision, communication, decision-making, discipline management, and the proper utilization of school resources toward the achievement of educational goals. A school environment with adequate infrastructure promotes smooth administration, enhances teachers' morale, and supports students' academic engagement. Functional classrooms encourage proper supervision of instructional activities, while laboratories and ICT facilities improve curriculum delivery and organizational efficiency. Educational systems that lack adequate infrastructure often experience difficulties in maintaining quality standards and achieving expected learning outcomes (OECD, 2023). The need for adequate school infrastructure has therefore become more important as educational systems continue to adapt to technological changes and increasing academic demands. This study therefore seeks to examine the availability and adequacy of school infrastructure for effective administration of private secondary schools in Rivers State.

Statement of the Problem

The provision of adequate school infrastructure remains a major factor in achieving effective administration and quality education in secondary schools. School infrastructure such as classroom facilities, laboratories, and ICT facilities plays a significant role in promoting conducive teaching and learning environments, effective supervision, proper communication, and efficient coordination of school activities. Functional classrooms provide comfort for both teachers and students, while laboratories support practical learning and ICT facilities enhance instructional delivery and administrative processes. UNESCO (2023) observed that adequate educational facilities contribute greatly to improved learning outcomes, school effectiveness, and institutional development.

In spite of the importance of these facilities, many secondary schools in developing countries continue to experience infrastructural deficiencies that affect educational administration and service delivery. Private secondary schools in Rivers State have continued to expand due to increasing demand for quality education and population growth. Many parents enroll their children in private schools with the expectation of better learning environments, effective management, and improved academic performance. However, observations in some private secondary schools within the state reveal concerns relating to inadequate classroom space, overcrowded learning environments, insufficient laboratory equipment, and poor ICT

facilities. Such conditions may hinder effective teaching, reduce students' participation in practical learning, limit the integration of technology in education, and create administrative difficulties for school managers.

OECD (2020) maintained that ICT infrastructure and conducive learning facilities are essential for effective school administration and educational improvement in modern schools. The persistence of inadequate infrastructural facilities in some private secondary schools may negatively affect administrative efficiency, curriculum implementation, teachers' productivity, and students' academic experiences. Although several studies have focused on school administration and educational resources, limited attention appears to have been given to the availability and adequacy of classroom facilities, laboratories, and ICT facilities for effective administration of private secondary schools in Rivers State. This situation therefore creates the need for this study.

Aim and Objectives of the Study

The aim of this study is to examine the availability and adequacy of school infrastructure for effective administration of private secondary schools in Rivers State. The specific objectives of the study are to examine the extent of:

- The availability and adequacy of classroom facilities for effective administration of private secondary schools in Rivers State.
- The availability and adequacy of laboratories for effective administration of private secondary schools in Rivers State.
- The availability and adequacy of ICT facilities for effective administration of private secondary schools in Rivers State.

Research Questions

The following research questions will guide the study:

- To what extent do the availability and adequacy of classroom facilities influence effective administration of private secondary schools in Rivers State?
- To what extent do the availability and adequacy of laboratories influence effective administration of private secondary schools in Rivers State?
- To what extent do the availability and adequacy of ICT facilities influence effective administration of private secondary schools in Rivers State?

Hypotheses

The following hypotheses will be tested at .05 level of significance:

- There is no significant influence of the availability and adequacy of classroom facilities on effective administration of private secondary schools in Rivers State.
- There is no significant influence of the availability and adequacy of laboratories on effective administration of private secondary schools in Rivers State.

- There is no significant influence of the availability and adequacy of ICT facilities on effective administration of private secondary schools in Rivers State.

THEORETICAL FOUNDATIONS

Educational Production Function Theory

Eric A. Hanushek (1979) propounded the Educational Production Function Theory to explain how educational inputs contribute to the achievement of desired educational outcomes. The theory was adapted from economic production models where inputs are transformed into outputs through organized processes. In the educational context, the theory assumes that resources such as teachers, school infrastructure, instructional materials, laboratories, classroom facilities, and technological resources function as inputs that influence educational performance and administrative effectiveness (Hanushek, 2020). The theory emphasizes that the quality and adequacy of educational resources determine the extent to which schools can achieve their goals effectively. Educational outcomes such as students' academic achievement, effective school administration, discipline, and quality teaching are therefore linked to the availability and proper utilization of educational inputs.

The Educational Production Function Theory remains relevant in understanding the importance of school infrastructure in secondary education because infrastructural facilities serve as major educational inputs within the school system. Classroom facilities, laboratories, and ICT facilities contribute significantly to teaching effectiveness, students' learning experiences, and administrative efficiency. Functional classrooms provide conducive environments for teaching and supervision, while laboratories encourage practical learning and the development of scientific skills among students. ICT facilities also support communication, data management, instructional delivery, and modern administrative practices within schools. OECD (2020) noted that educational institutions with adequate learning facilities and technological resources are better positioned to achieve improved educational performance and organizational effectiveness.

The relevance of the theory to the present study lies in its explanation that effective school administration depends partly on the adequacy of infrastructural resources available within schools. Private secondary schools in Rivers State require adequate classroom facilities, functional laboratories, and ICT facilities to ensure proper coordination of academic activities and smooth implementation of school programmes. Where such facilities are inadequate, school administrators may experience difficulties in supervision, curriculum implementation, communication, and maintenance of quality standards. UNESCO (2023) emphasized that the provision of adequate educational infrastructure remains necessary for improving school effectiveness and achieving sustainable educational development. The Educational Production Function Theory therefore provides an appropriate theoretical foundation for examining the availability and adequacy of school infrastructure for effective administration of private secondary schools in Rivers State.

School Capacity Building Theory

Linda Lambert (1998) propounded the School Capacity Building Theory to explain how schools improve their effectiveness through the development of organizational resources, collaborative practices, leadership capacity, and supportive learning environments. The theory emphasizes that

educational institutions achieve sustainable growth when adequate human and material resources are available to support instructional and administrative processes. Lambert (1998) explained that school capacity involves the collective ability of teachers, administrators, facilities, and organizational structures to improve students' learning outcomes and institutional performance. The theory views schools as dynamic organizations where the availability of necessary resources contributes significantly to educational effectiveness and administrative efficiency.

School Capacity Building Theory recognizes school infrastructure as an important factor in strengthening the operational effectiveness of educational institutions. Facilities such as classrooms, laboratories, and ICT resources contribute directly to the quality of teaching, students' engagement, and administrative coordination within schools. Earthman (2004) maintained that the condition and adequacy of school facilities influence students' academic achievement, teachers' effectiveness, and the overall functioning of schools. Adequate classroom facilities provide conducive environments for teaching and supervision, while laboratories support practical learning experiences that improve students' scientific understanding and critical thinking abilities. ICT facilities also enhance communication, data management, instructional delivery, and record keeping, thereby improving administrative processes within schools. The theory therefore suggests that schools with stronger infrastructural capacity are more likely to achieve effective administration and quality educational outcomes.

The relevance of School Capacity Building Theory to the present study lies in its explanation that effective school administration depends greatly on the adequacy of institutional resources available within schools. Private secondary schools in Rivers State require adequate classroom facilities, functional laboratories, and ICT facilities to ensure smooth administration and effective implementation of educational programmes. Administrators working in schools with inadequate infrastructure may experience challenges relating to supervision, communication, classroom management, and curriculum implementation. Leithwood and Louis (2012) noted that school improvement and organizational effectiveness are strongly connected to the availability of supportive learning conditions and institutional resources. In the same vein, Fullan (2016) argued that educational improvement becomes difficult when schools lack the facilities and organizational support necessary for effective teaching and administration. School Capacity Building Theory therefore provides a suitable framework for understanding how the availability and adequacy of school infrastructure influence effective administration of private secondary schools in Rivers State.

CONCEPTUAL CLARIFICATIONS

School Infrastructure

School infrastructure refers to the physical facilities, learning resources, and support systems that make teaching, learning, and school administration possible within educational institutions. These facilities include classrooms, laboratories, libraries, administrative offices, furniture, electricity supply, water systems, sporting facilities, sanitation units, and information and communication technology (ICT) facilities. Educational infrastructure provides the physical environment within which educational objectives are achieved and academic activities are coordinated effectively. Earthman (2004) maintained that the quality of school infrastructure has a direct relationship with students' academic achievement, teachers' productivity, and the general effectiveness of schools. Educational institutions with functional and well-maintained

infrastructure often create better learning conditions for students and more supportive working environments for teachers and administrators.

School infrastructure occupies an important position in the educational system because it contributes to effective curriculum implementation and organizational efficiency. A conducive school environment encourages discipline, regular attendance, active participation in learning activities, and positive interaction among teachers, students, and administrators. Tanner (2009) explained that school facilities influence students' behaviour, motivation, and overall learning experiences. Functional infrastructure also assists school administrators in coordinating instructional activities, supervising staff, maintaining records, and ensuring smooth school operations. Inadequate infrastructure, on the other hand, may result in overcrowded classrooms, limited practical learning opportunities, poor communication systems, and ineffective administration. Such conditions can negatively affect the quality of teaching and students' academic performance.

Modern educational systems place increasing emphasis on the provision of quality infrastructure because schools are expected to meet changing educational and technological demands. ICT facilities have become particularly important due to the growing integration of digital technologies into teaching, learning, and administrative processes. Fullan (2016) argued that educational improvement depends partly on the ability of schools to provide supportive environments capable of promoting innovation and organizational growth. Laboratories also remain essential for science education because they provide opportunities for experimentation, observation, and practical learning experiences. Educational infrastructure therefore serves as the foundation upon which effective teaching, learning, and school administration are built.

Availability of School Infrastructure

Availability of school infrastructure refers to the presence or existence of educational facilities and resources required for effective teaching, learning, and administration in schools. The concept focuses on whether important facilities such as classrooms, laboratories, libraries, ICT facilities, furniture, and administrative offices are provided within the school environment. Availability does not only concern the physical existence of facilities but also their accessibility and usability for educational purposes. Leithwood and Louis (2012) noted that schools function more effectively when essential facilities and institutional resources are available to support instructional delivery and organizational management. Educational goals may therefore become difficult to achieve in schools where necessary facilities are absent or inaccessible. The availability of infrastructure contributes significantly to educational quality because teachers and students depend on these resources for academic activities. Classrooms provide spaces for teaching and learning interactions, while laboratories help students acquire practical skills and scientific knowledge. ICT facilities also support communication, data management, online learning, and instructional innovation. Schools with available infrastructural facilities often experience better organization of academic activities and improved administrative coordination. Administrators in such schools are usually better positioned to supervise teaching, manage records, and ensure discipline within the school environment.

In contrast, schools lacking important facilities may struggle to achieve effective curriculum implementation and proper coordination of school programmes. Availability of school infrastructure has become a major concern in many developing countries due to increasing student enrolment, population growth, and limited financial resources. Educational

planners and school proprietors are expected to provide sufficient facilities capable of supporting quality education and effective administration. Barrett et al. (2019) emphasized that the physical learning environment contributes greatly to students' educational experiences and learning outcomes. Schools where facilities are unavailable often face challenges such as overcrowding, reduced students' engagement, poor practical learning opportunities, and ineffective school management. The presence of adequate infrastructure therefore remains necessary for achieving educational objectives and promoting institutional effectiveness.

Adequacy of School Infrastructure

Adequacy of school infrastructure refers to the extent to which available educational facilities are sufficient, functional, and suitable for meeting the instructional and administrative needs of schools. The concept goes beyond mere availability because a facility may exist within a school but still be inadequate in terms of quantity, quality, condition, or functionality. Adequate infrastructure implies that facilities are enough to accommodate the population of students and staff while also supporting effective teaching, learning, and school administration. Earthman and Lemasters (2009) stated that adequate educational facilities contribute positively to students' comfort, concentration, academic achievement, and institutional effectiveness. Schools with adequate infrastructure are therefore more likely to achieve improved educational outcomes and administrative efficiency.

Adequacy of school infrastructure is often measured through the condition, quality, accessibility, and maintenance of facilities within schools. Adequate classroom facilities require sufficient space, proper ventilation, good lighting, functional furniture, and comfortable seating arrangements that support learning activities. Laboratories are considered adequate when they contain enough equipment, instructional materials, safety devices, and practical workspaces for students and teachers. ICT facilities also become adequate when computers, internet connectivity, projectors, and other digital resources are sufficient to meet instructional and administrative demands. Inadequate infrastructure may create difficulties for school administrators in areas such as supervision, communication, record keeping, and curriculum implementation. Such deficiencies can also reduce teachers' effectiveness and negatively affect students' learning experiences.

Educational administrators and policymakers continue to emphasize the need for adequate school infrastructure because the quality of educational facilities influences the overall effectiveness of schools. Darling-Hammond et al. (2020) argued that supportive learning environments and adequate educational resources remain important factors in improving students' engagement and school performance. Adequate infrastructure also contributes to safety, discipline, and organizational stability within schools. Private secondary schools, in particular, are expected to provide sufficient infrastructural facilities capable of supporting quality educational service delivery and effective administration. Attention to infrastructural adequacy therefore remains necessary for promoting educational development, institutional effectiveness, and improved academic outcomes in schools.

Effective Administration in Private Secondary Schools

Effective administration in private secondary schools involves the proper coordination of human, material, financial, and instructional resources toward the achievement of educational goals.

School administrators are expected to provide leadership that promotes quality teaching, discipline, effective communication, and smooth implementation of school programmes. Effective administration also requires careful planning, supervision of teachers and students, decision-making, staff motivation, and maintenance of conducive learning environments. Bush (2020) explained that effective school administration depends largely on leadership practices that encourage collaboration, accountability, and continuous improvement within educational institutions. Administrators in private secondary schools therefore play significant roles in ensuring that educational standards are maintained and school objectives are achieved successfully.

Private secondary schools are often established to provide quality education, improved discipline, and better learning conditions for students. Effective administration in such schools contributes greatly to students' academic achievement, teachers' productivity, and institutional growth. School administrators are expected to ensure proper utilization of educational facilities, implementation of school policies, and maintenance of positive relationships among teachers, students, parents, and other stakeholders. Leithwood et al. (2020) maintained that effective school leadership positively influences school climate, instructional quality, and students' learning outcomes. Schools with effective administration are usually characterized by organized academic activities, proper supervision, high staff commitment, and improved educational performance.

The growing complexity of educational systems has increased the responsibilities of administrators in private secondary schools. Technological advancement, curriculum changes, and rising societal expectations require school administrators to adopt innovative and strategic management practices. Fullan (2016) stated that successful educational administration requires the ability to manage change, improve institutional capacity, and promote sustainable educational development. Effective administration therefore remains essential for achieving quality education and organizational effectiveness in private secondary schools.

Availability and adequacy of classroom facilities for effective administration of private secondary schools

Classroom facilities remain one of the most important aspects of school infrastructure because they provide the immediate environment where teaching, learning, supervision, and other instructional activities take place. The availability and adequacy of classroom facilities contribute significantly to effective administration in private secondary schools because administrators depend on functional learning spaces to coordinate academic programmes and maintain discipline within the school environment. Classroom facilities include school buildings, desks, chairs, writing boards, lighting systems, ventilation, ceilings, windows, and instructional spaces that support learning activities. Barrett et al. (2015) stated that the quality and condition of classroom environments influence students' academic progress, comfort, concentration, and participation in learning activities. Schools with adequate classroom facilities are therefore more likely to achieve effective instructional delivery and improved educational outcomes.

The availability of classroom facilities enables school administrators to organize teaching schedules effectively, manage class sizes, and supervise instructional activities properly. Private secondary schools with sufficient classrooms often experience fewer challenges relating to overcrowding, noise, and classroom management. Adequate classrooms also create conducive learning environments that encourage interaction between teachers and students. Uline et al.

(2010) explained that the quality of educational facilities contributes positively to school climate, teacher morale, and students' achievement. Administrators working in schools with adequate classroom facilities are usually better positioned to coordinate academic programmes and maintain smooth school operations. Inadequate classroom facilities, on the other hand, may create difficulties in supervision, reduce teaching effectiveness, and negatively affect students' learning experiences.

The adequacy of classroom facilities goes beyond mere availability because classrooms must be sufficient, functional, safe, and properly maintained to support effective administration and quality education. Educational administrators are expected to ensure that classrooms provide comfortable seating arrangements, proper ventilation, adequate lighting, and enough instructional space for both teachers and students. Darling-Hammond et al. (2020) maintained that supportive learning environments contribute greatly to students' engagement, emotional well-being, and academic success. Private secondary schools that maintain adequate classroom facilities are therefore more likely to achieve effective administration, improved instructional quality, and positive educational outcomes. Adequate classroom facilities also strengthen institutional effectiveness and promote the attainment of educational goals within schools.

Availability and adequacy of laboratories for effective administration of private secondary schools

Laboratories constitute an important component of school infrastructure because they support practical teaching and learning, especially in science-oriented subjects. The availability and adequacy of laboratories contribute significantly to effective administration in private secondary schools because school administrators rely on functional laboratory facilities to ensure proper curriculum implementation and quality instructional delivery. Laboratories provide opportunities for experimentation, observation, demonstration, and practical application of scientific concepts taught in classrooms. Hofstein and Kind (2012) explained that laboratory activities improve students' scientific understanding, problem-solving abilities, and critical thinking skills. Schools with available and functional laboratories are therefore better positioned to promote effective science education and academic excellence.

The availability of laboratories enables teachers to conduct practical lessons that help students connect theoretical knowledge with real-life experiences. Private secondary schools with adequate laboratory facilities often experience improved teaching effectiveness, better students' participation, and enhanced instructional quality. Laboratories equipped with scientific instruments, chemicals, models, and safety materials provide students with opportunities to develop practical competencies and scientific reasoning abilities. Abrahams and Reiss (2012) noted that practical laboratory experiences increase students' interest in science subjects and strengthen their understanding of scientific concepts. Effective school administration also becomes easier where laboratory facilities are available because administrators can supervise practical activities, monitor instructional standards, and ensure compliance with curriculum requirements. Inadequate laboratories may therefore hinder effective teaching, reduce students' practical exposure, and create administrative challenges within schools.

Adequacy of laboratory facilities goes beyond mere availability because laboratories must be sufficient, safe, functional, and properly equipped to meet the instructional needs of students and teachers. Educational administrators are expected to ensure that laboratories contain enough equipment, practical materials, safety devices, and workspace capable of supporting

effective science instruction. Schools with inadequate laboratory facilities may struggle to achieve curriculum objectives and maintain educational quality standards. NSTA (2021) emphasized that properly equipped laboratories are essential for meaningful science learning and effective practical instruction. Adequate laboratories therefore remain necessary for improving teaching effectiveness, strengthening school administration, and promoting quality educational outcomes in private secondary schools.

Availability and adequacy of ICT facilities for effective administration of private secondary schools

ICT facilities have become an essential component of school infrastructure because modern educational administration depends greatly on digital technologies for communication, teaching, learning, and management of school activities. The availability and adequacy of ICT facilities contribute significantly to effective administration in private secondary schools because school administrators rely on technological resources for record keeping, information management, supervision, and coordination of academic programmes. ICT facilities include computers, internet connectivity, projectors, printers, scanners, interactive boards, digital communication systems, and other technological devices used for educational and administrative purposes. Selwyn (2021) explained that digital technologies continue to transform educational practices and improve access to information, communication, and instructional resources within schools. Schools with available ICT facilities are therefore better positioned to improve administrative efficiency and educational effectiveness.

The availability of ICT facilities enables school administrators to perform administrative responsibilities more effectively and efficiently. School records such as students' attendance, examination results, financial information, and staff data can be processed and stored electronically through ICT systems. Communication between school administrators, teachers, parents, and students also becomes easier through digital platforms and online communication channels. Teachers utilize ICT resources to improve lesson delivery, access instructional materials, and expose students to modern learning opportunities. Trust and Whalen (2020) noted that technology integration supports innovative teaching practices and strengthens educational continuity during periods of disruption. Private secondary schools with available ICT facilities are therefore more capable of adapting to modern educational demands and technological changes.

Adequacy of ICT facilities goes beyond their mere presence because the facilities must be sufficient, functional, accessible, and properly maintained to support effective teaching and school administration. Educational administrators are expected to ensure that schools possess enough computers, reliable internet services, stable electricity supply, and other digital resources capable of meeting the instructional and administrative needs of teachers and students. Inadequate ICT facilities may hinder communication, reduce administrative efficiency, and limit the integration of technology into teaching and learning processes. Fullan et al. (2020) maintained that educational improvement in contemporary society depends partly on schools' ability to integrate technology effectively into instructional and organizational processes. Adequate ICT facilities therefore remain necessary for strengthening effective administration, improving instructional quality, and promoting educational development in private secondary schools.

METHODOLOGY

This study adopted a descriptive survey research design to examine the availability and adequacy of school infrastructure for effective administration of private secondary schools in Rivers State. The design was considered appropriate because it enabled the researcher to collect data from a representative sample of respondents and describe existing conditions regarding school infrastructure and effective administration without manipulating any variable. The population of the study comprised administrators and teachers in registered private secondary schools in Rivers State.

The estimated population was drawn from private secondary schools across selected Local Government Areas in the state and included principals, vice principals, and teachers from different subject areas and school levels. A stratified random sampling technique was employed to ensure adequate representation of respondents from different schools, after which simple random sampling was used to select participants from each stratum. A total sample size of 220 respondents was selected for the study. Data for the study were collected using a structured questionnaire titled "Availability and Adequacy of School Infrastructure for Effective Administration Questionnaire (AASIEAQ)".

The instrument consisted of two sections: Section A captured demographic information of respondents, while Section B contained items measuring dimensions of school infrastructure such as classroom facilities, laboratories, and ICT facilities, as well as indicators of effective administration such as supervision of instruction, record keeping, communication effectiveness, and coordination of school activities. The items were structured on a four-point Likert scale of Very High Extent (4), High Extent (3), Low Extent (2), and Very Low Extent (1). The instrument was subjected to face and content validation by three experts in Educational Management and Measurement and Evaluation. Their corrections and suggestions were used to improve the clarity, relevance, and appropriateness of the instrument.

To establish the reliability of the instrument, a pilot test was conducted using 20 teachers from private secondary schools outside the study area. The data obtained from the pilot study were analyzed using Cronbach's Alpha, which yielded a reliability coefficient of .870, indicating that the instrument was reliable for data collection. Data collection was carried out by the researcher with the assistance of two trained research assistants. The questionnaires were administered directly to the respondents in their various schools and retrieved after three days. Out of the 220 questionnaires distributed, 198 were successfully retrieved, representing a high return rate. The data collected were analyzed using mean and standard deviation to answer the research questions, while independent t-test was used to test the hypotheses at 0.05 level of significance. A criterion mean of 2.50 was used as the decision benchmark for accepting or rejecting items.

RESULTS AND DISCUSSIONS

Research Question One: The availability and adequacy of classroom facilities for effective administration of private secondary schools in Rivers State.

Table 1: Mean and standard deviation showing the influence of classroom facilities on effective administration of private secondary schools in Rivers State

S/N	Items	Male (N=105) Mean	SD	Female (N=93) Mean	SD	Mean Set	Remark
1.	Availability of adequately ventilated and spacious classrooms improves effective supervision of students and teaching activities in my school	3.71	0.92	3.64	0.88	3.67	Very High Extent
2.	Provision of modern classroom furniture helps principals maintain discipline and effective classroom management	3.48	0.81	3.57	0.76	3.52	Very High Extent
3.	Inadequate classroom facilities do not affect administrative effectiveness in private secondary schools	1.98	0.66	2.11	0.72	2.04	Low Extent
4.	Availability of classrooms with proper lighting and learning space improves teachers' commitment to instructional duties	3.62	0.87	3.74	0.79	3.68	Very High Extent
5.	Well-maintained classroom facilities support smooth coordination of academic and co-curricular activities in schools	3.39	0.78	3.45	0.74	3.42	High Extent
	Grand mean	**3.24**	**0.80**	**3.30**	**0.77**	**3.27**	**High Extent**

The result presented in Table 1 indicated respondents' perceptions of the influence of classroom facilities on the effective administration of private secondary schools in Rivers State. The overall grand mean of 3.27 (SD = 0.79) showed that respondents agreed to a high extent that the availability and adequacy of classroom facilities contribute to effective school administration. The close standard deviation values for male (SD = 0.80) and female (SD = 0.77) respondents indicate a relatively high level of consistency in their responses.

Specifically, the respondents agreed to a very high extent that the availability of adequately ventilated and spacious classrooms improves the effective supervision of students and teaching activities, with a mean set of 3.67. This suggests that conducive classroom environments enable school administrators to monitor teaching and learning activities more effectively. Similarly, respondents indicated to a very high extent that the provision of modern classroom furniture enhances principals' ability to maintain discipline and effective classroom management, with a mean set of 3.52. This finding implies that adequate classroom furniture contributes to an orderly learning environment and facilitates administrative efficiency.

The respondents also agreed to a very high extent that classrooms with proper lighting and sufficient learning space improve teachers' commitment to instructional duties, recording the highest mean set of 3.68. This underscores the importance of quality classroom environments in motivating teachers and promoting instructional effectiveness. Furthermore, respondents agreed to a high extent that well-maintained classroom facilities support the smooth coordination of

academic and co-curricular activities in schools, with a mean set of 3.42, indicating that proper maintenance of classroom infrastructure enhances the overall administrative functioning of schools.

Conversely, respondents indicated a low extent of agreement (mean set = 2.04) with the statement that inadequate classroom facilities do not affect administrative effectiveness in private secondary schools. The low mean score suggests that respondents generally disagreed with the statement, implying that inadequate classroom facilities negatively affect the effectiveness of school administration. This reinforces the importance of providing adequate classroom infrastructure for the efficient management of private secondary schools.

The findings demonstrated that the availability and adequacy of classroom facilities significantly enhance the effective administration of private secondary schools in Rivers State by improving supervision, strengthening classroom management, promoting teachers' instructional commitment, and facilitating the coordination of school activities. The consistency of responses across both male and female respondents further suggests a shared perception regarding the critical role of classroom facilities in achieving effective school administration.

These findings agree with the position of Barrett et al. (2015) who stated that the quality and condition of classroom environments influence students' academic progress, comfort, concentration, and participation in learning activities. Schools with adequate classroom facilities are therefore more likely to achieve effective instructional delivery and improved educational outcomes. Darling-Hammond et al. (2020) also maintained that supportive learning environments contribute greatly to students' engagement, emotional well-being, and academic success.

Research Question Two: The availability and adequacy of laboratories for effective administration of private secondary schools in Rivers State.

Table 2: Mean and standard deviation showing the influence of laboratories on effective administration of private secondary schools in Rivers State

S/N	Items	Male (N=105) Mean	SD	Female (N=93) Mean	SD	Mean Set	Remark
6.	Availability of functional science laboratories enhances practical teaching and effective administration in private secondary schools	3.66	0.90	3.78	0.84	3.72	Very High Extent
7.	Well-equipped laboratories improve students' participation in practical learning activities and support academic administration	3.54	0.83	3.61	0.77	3.57	Very High Extent
8.	Absence of laboratory facilities does not affect effective management of private secondary schools	2.07	0.71	2.15	0.75	2.11	Low Extent
9.	Availability of standard laboratories supports effective monitoring of science-related instructional activities	3.43	0.79	3.52	0.73	3.47	High Extent
10.	Laboratory facilities improve students' academic performance and enhance administrative efficiency in schools	3.61	0.88	3.70	0.82	3.65	Very High Extent
	Grand mean	**3.26**	**0.82**	**3.35**	**0.78**	**3.30**	**High Extent**

The results presented in Table 2 showed respondents' perceptions of the influence of laboratory facilities on the effective administration of private secondary schools in Rivers State. The overall grand mean of 3.30 (SD = 0.80) indicates that respondents agreed to a high extent that the availability and adequacy of laboratories contribute to effective school administration. The standard deviation values for male (SD = 0.82) and female (SD = 0.78) respondents are relatively low and closely aligned, suggesting that the responses were consistent across both groups.

Specifically, respondents agreed to a very high extent that the availability of functional science laboratories enhances practical teaching and effective administration in private secondary schools, with a mean set of 3.72. This finding implies that functional laboratories create opportunities for practical learning while enabling school administrators to effectively implement and supervise science education programmes. Likewise, respondents indicated to a very high extent that well-equipped laboratories improve students' participation in practical learning activities and support academic administration, with a mean set of 3.57. This suggests that adequately equipped laboratories promote active student engagement and facilitate the efficient management of instructional activities.

Furthermore, respondents agreed to a high extent that the availability of standard laboratories supports effective monitoring of science-related instructional activities, with a mean set of 3.47. This indicates that standard laboratory facilities enable school administrators and teachers to effectively supervise practical lessons, ensuring that instructional objectives are achieved. Similarly, respondents agreed to a very high extent that laboratory facilities improve students' academic performance and enhance administrative efficiency in schools, with a mean set of 3.65. This finding underscores the importance of laboratory resources in fostering quality teaching and learning while strengthening overall school administration.

In contrast, respondents indicated a low extent of agreement (mean set = 2.11) with the statement that the absence of laboratory facilities does not affect the effective management of private secondary schools. The low mean score shows that respondents generally disagreed with this statement, implying that the lack of laboratory facilities adversely affects the effective administration and management of private secondary schools. This finding highlights the indispensable role of laboratories in supporting both instructional delivery and administrative effectiveness.

Generally, the findings revealed that the availability and adequacy of laboratory facilities exert a positive influence on the effective administration of private secondary schools in Rivers State. Functional and well-equipped laboratories enhance practical teaching, increase students' participation in science-related activities, facilitate effective supervision of instructional programmes, improve academic performance, and strengthen administrative efficiency. The similarity in responses between male and female respondents further demonstrates a common perception that laboratory facilities are essential for achieving effective school administration.

The findings support the assertions of Hofstein and Kind (2012) who explained that laboratory activities improve students' scientific understanding, problem-solving abilities, and critical thinking skills. Schools with available and functional laboratories are therefore better positioned to promote effective science education and academic excellence. In the same vein, Abrahams and Reiss (2012) noted that practical laboratory experiences increase students' interest in science subjects and strengthen their understanding of scientific concepts. Effective school administration also becomes easier where laboratory facilities are available because

administrators can supervise practical activities, monitor instructional standards, and ensure compliance with curriculum requirements.

Research Question Three: The availability and adequacy of ICT facilities for effective administration of private secondary schools in Rivers State.

Table 3: Mean and standard deviation showing the influence of ICT facilities on effective administration of private secondary schools in Rivers State

S/N	Items	Male (N=105) Mean	SD	Female (N=93) Mean	SD	Mean Set	Remark
11.	Availability of computer systems and digital learning facilities improves effective administration in private secondary schools	3.74	0.91	3.82	0.86	3.78	Very High Extent
12.	Internet connectivity and ICT facilities support effective communication between administrators, teachers, and students	3.49	0.80	3.58	0.76	3.53	Very High Extent
13.	ICT facilities do not contribute to effective record keeping and administrative efficiency in schools	2.03	0.69	2.18	0.74	2.10	Low Extent
14.	Digital instructional facilities improve supervision of teaching and learning activities in schools	3.58	0.84	3.67	0.79	3.62	Very High Extent
15.	Availability of ICT facilities improves storage of students' records and coordination of school activities	3.46	0.77	3.55	0.73	3.50	Very High Extent
	Grand mean	**3.26**	**0.80**	**3.36**	**0.77**	**3.31**	**High Extent**

The results presented in Table 3 indicate respondents' perceptions of the influence of ICT facilities on the effective administration of private secondary schools in Rivers State. The overall grand mean of 3.31 (SD = 0.79) shows that respondents agreed to a high extent that the availability and adequacy of ICT facilities enhance effective school administration. The standard deviation values for male (SD = 0.80) and female (SD = 0.77) respondents are relatively close, indicating a reasonable level of consistency in their responses.

Specifically, respondents agreed to a very high extent that the availability of computer systems and digital learning facilities improves effective administration in private secondary schools, with a mean set of 3.78. This suggests that digital technologies facilitate administrative operations and improve the management of teaching and learning activities. Similarly, respondents indicated to a very high extent that internet connectivity and ICT facilities support effective communication between administrators, teachers and students, with a mean set of 3.53. This finding implies that ICT enhances information sharing, coordination, and collaboration within the school system.

Furthermore, respondents agreed to a very high extent that digital instructional facilities improve the supervision of teaching and learning activities, with a mean set of 3.62. This indicates that ICT tools enable administrators to monitor instructional processes more effectively and support quality assurance in schools. Respondents also agreed to a very high extent that the availability of ICT facilities improves the storage of students' records and the coordination of

school activities, with a mean set of 3.50, highlighting the role of ICT in enhancing record management and administrative organization.

In contrast, respondents indicated a low extent of agreement (mean set = 2.10) with the statement that ICT facilities do not contribute to effective record keeping and administrative efficiency in schools. The low mean score shows that respondents generally disagreed with the statement, implying that ICT facilities significantly contribute to efficient record keeping and administrative effectiveness in private secondary schools.

On the whole, the findings revealed that the availability and adequacy of ICT facilities positively influence the effective administration of private secondary schools in Rivers State. ICT resources improve communication, supervision of instructional activities, record management, coordination of school operations, and overall administrative efficiency. The similarity in responses between male and female respondents further demonstrates a shared perception that ICT facilities are essential for achieving effective school administration.

These findings are in consonance with the views of Selwyn (2021) who remarked that digital technologies continue to transform educational practices and improve access to information, communication, and instructional resources within schools. Schools with available ICT facilities are therefore better positioned to improve administrative efficiency and educational effectiveness. Fullan et al. (2020) further supported the findings of this study by his assertions. They strongly maintained that educational improvement in contemporary society depends partly on schools' ability to integrate technology effectively into instructional and organizational processes. Adequate ICT facilities therefore remain necessary for strengthening effective administration, improving instructional quality, and promoting educational development in private secondary schools.

Hypotheses Testing

Hypothesis One: There is no significant influence of classroom facilities on effective administration of private secondary schools in Rivers State.

Table 4: Independent t-test summary showing significant influence of classroom facilities on effective administration of private secondary schools in Rivers State

Category	N	Mean	SD	Df	t-cal	p-value Decision
Male Respondents	105	3.28	0.91	196	6.14	.004 Rejected
Female Respondents	93	3.47	0.79			($p<0.05$)

The data in Table 4 shows that classroom facilities have a significant influence on effective administration of private secondary schools in Rivers State. Male respondents recorded a mean score of 3.28 with a standard deviation of 0.91, while female respondents recorded a higher mean score of 3.47 with a standard deviation of 0.79. The total number of respondents was 198, while the degree of freedom was 196. The calculated t-value of 6.14 with a p-value of .004 is less than the 0.05 level of significance. This led to the rejection of the null hypothesis. The result implies that availability and adequacy of classroom facilities significantly influence effective administration in private secondary schools.

Hypothesis Two: There is no significant influence of laboratories on effective administration of private secondary schools in Rivers State.

Table 5: Independent t-test summary showing significant influence of laboratories on effective administration of private secondary schools in Rivers State

Category	N	Mean	SD	Df	t-cal	p-value Decision
Male Respondents	105	3.34	0.88	196	7.28	.001 Rejected
Female Respondents	93	3.56	0.83			(p<0.05)

The data in Table 5 indicates that laboratories significantly influence effective administration of private secondary schools in Rivers State. Male respondents recorded a mean score of 3.34 with a standard deviation of 0.88, while female respondents recorded a higher mean score of 3.56 with a standard deviation of 0.83. The total number of respondents was 198, and the degree of freedom was 196. The calculated t-value of 7.28 with a p-value of .001 is less than the 0.05 level of significance. As a result, the null hypothesis was rejected. This means that availability and adequacy of laboratories contribute significantly to effective school administration, especially in practical learning, supervision of science instruction, and students' academic development.

Hypothesis Three: There is no significant influence of ICT facilities on effective administration of private secondary schools in Rivers State.

Table 6: Independent t-test summary showing significant influence of ICT facilities on effective administration of private secondary schools in Rivers State

Category	N	Mean	SD	Df	t-cal.	p-value Decision
Male Respondents	105	3.41	0.84	196	5.63	.009 Rejected
Female Respondents	93	3.62	0.78			(p<0.05)

The data in Table 6 reveals that ICT facilities significantly influence effective administration of private secondary schools in Rivers State. Male respondents recorded a mean score of 3.41 with a standard deviation of 0.84, while female respondents recorded a higher mean score of 3.62 with a standard deviation of 0.78. The total number of respondents was 198, and the degree of freedom was 196. The calculated t-value of 5.63 with a p-value of .009 is less than the 0.05 level of significance. Therefore, the null hypothesis was rejected. This shows that ICT facilities significantly support effective administration through improved communication, record keeping, digital learning support, and coordination of school activities.

CONCLUSION

The study concluded that the availability and adequacy of school infrastructure remain essential factors in achieving effective administration of private secondary schools in Rivers State. Classroom facilities such as spacious classrooms, functional furniture, adequate ventilation, and conducive learning environments contribute significantly to smooth instructional delivery, discipline management, and effective coordination of school activities. Schools with adequate classroom facilities tend to experience improved teacher performance, better student participation, and enhanced administrative efficiency. The study also established that laboratories play an important role in supporting effective school administration and quality teaching and learning. Functional science laboratories equipped with relevant materials and equipment help

schools achieve curriculum objectives, encourage practical learning, and improve students' academic performance. Administrators in schools with adequate laboratory facilities are better positioned to organize academic activities effectively and maintain educational standards. Furthermore, the availability and adequacy of ICT facilities were found to enhance administrative effectiveness through improved communication, record keeping, data management, instructional support, and access to digital learning resources. Schools with functional ICT facilities are more capable of adapting to modern educational demands and administrative practices. Therefore, adequate provision and maintenance of classroom facilities, laboratories, and ICT facilities are necessary for effective administration and improved educational outcomes in private secondary schools in Rivers State.

Recommendations

- Proprietors of private secondary schools in Rivers State should provide more adequate classroom facilities such as comfortable furniture, proper ventilation, sufficient classroom space, and conducive learning environments to enhance effective administration and teaching activities.
- School administrators should establish regular maintenance and inspection programmes to ensure that existing school infrastructure remains functional, safe, and suitable for effective teaching and administrative operations.
- Private school owners should equip science laboratories with modern equipment, instructional materials, and adequate safety facilities to promote practical learning and improve the quality of education offered in schools.
- Government agencies and educational regulatory bodies should strengthen monitoring and supervision of private secondary schools to ensure compliance with minimum infrastructure standards required for effective school administration.
- School proprietors should invest more in ICT facilities such as computers, internet services, projectors, and digital learning tools in order to improve communication, record management, teaching effectiveness, and administrative efficiency.
- Parents, community stakeholders, and non-governmental organizations should collaborate with private school management in supporting infrastructural development through donations, partnerships, and other forms of assistance aimed at improving educational facilities in schools.

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