MAINTENANCE OF SCHOOL INFRASTRUCTURE AND STUDENTS' ACADEMIC PERFORMANCE IN PRIVATE SECONDARY SCHOOLS IN KWARA STATE, NIGERIA

Muritala Adaramaja SHEU

Department of Educational Management, Faculty of Education, Kwara State University, Malete
Corresponding Author: muritala.sheu@kwasu.edu.ng; +2348035992084

Abstract

This study examines the maintenance of school infrastructure and students' academic performance in private secondary schools in Kwara State, Nigeria. The research is motivated by concerns over the declining condition of school facilities and its potential effects on students' learning outcomes. Using a descriptive and correlational survey design, simple random technique was used to select participant and data were collected from 450 respondents, comprising 50 principals and 400 teachers across 50 randomly selected private secondary schools. The study employed a researcher-designed questionnaire and checklist to assess the state of school infrastructure, maintenance practices, and students' academic performance based on their results in the 2021 to 2025 West African Senior School Certificate Examination (WASSCE). The instrument was validated by experts in the area of Educational Management and Educational Measurement and Evaluation. Test-retest method of reliability was conducted and obtained a correlation coefficient of 0.75. Five research questions and one hypothesis guided the conduct of the study. The descriptive statistics of frequency count, mean and percentage rating were used to answer the research questions raised in the study, while the Pearson product-moment correlation statistic was used to test the research hypothesis which were tested at a 0.05 level of significance. Findings indicate that a significant proportion of school facilities, including classrooms, laboratories, libraries, and furniture, need urgent maintenance. Key factors contributing to facility depreciation include delayed maintenance, inadequate funding, and poor maintenance culture. The study establishes a strong positive correlation between effective maintenance strategies—preventive, periodic, corrective, and breakdown maintenance and students' academic performance with mean of 3.25. Based on these findings, it was recommended, among others, that Proprietors of schools should ensure the provision of adequate infrastructural facilities in proportion to student enrolment to prevent overutilization.

Keywords: Infrastructure Maintenance, Academic Performance, Private Secondary Schools, WASSCE, Kwara State

Introduction

The goal of schools is to facilitate learning by structuring teaching processes and providing the human, material and environmental conditions necessary for effective learner development. It is also more crucial that educators and students be given the right space and access to sufficient infrastructure. This is what the school's facilities are all about (Aman, 2022). As a result, the physical manifestation and spatial interpretation of the school curriculum is found in the facilities. Secondary schools in Kwara State and throughout Nigeria are expected to operate in a way that advances the national education goals, regardless of who owns them. In order to do this, pupils are required to do exceptionally well on the final exam, which establishes the calibre of secondary school production. This is one of the metrics used to assess how successful an educational system is. Islam (2021) asserts that the system provides structural and instructional support which significantly enhances students' performance.

In Nigeria, there is a widespread consensus that private schools outperform public schools in ones in student achievement and in the availability of human and physical resources (Adebayo, 2009). Many parents have chosen to enrol their kids in private secondary schools as a result of this circumstance. Additionally, studies indicate that a majority of students admitted who into Nigerian universities, polytechnics, and colleges of education are graduates of private secondary schools (Jamb, 2022).

The quality of education delivered by teachers and the academic achievement of students of any private school is dependent on several factors of which school facilities are paramount. School plant are materials resources that enhance teaching and learning thereby making the process meaningful and purposeful. School facilities are school plant. School facilities refer to the entire school plant which school administrators, teachers and students' harness,

allocate and utilise for the smooth and efficient management of any educational institution, for the main objective of bringing about effective and purposeful teaching and learning experience.

The educational process has multiple purposes, for instance, higher levels of schooling are associated with higher earnings and economic mobility, better health, lower mortality rates, and greater participation in the leadership process in one's immediate and the global community (Abdulbaqi et al., 2025). In an attempt to put sound education on ground worldwide, many factors have been identified as being responsible for falling standard of education where it is perceived and established. Among such factors is the issue of poor maintenance of infrastructural facilities. Akinyemi and Gbenu (2020) and Akorede et al. (2023) noted that poor classroom maintenance and underutilization are common in Nigerian secondary schools, negatively affecting teacher productivity, student learning and academic performance. Consequently, this study examined the relationship between maintenance of school infrastructure and students' academic performance in private secondary schools in Kwara State, Nigeria.

Statement of the Problem

Education remains a critical instrument for national development and for achieving the objectives stated in the Nigeria's National Policy on Education (NPE, 2014). At the secondary level, which forms the foundation for tertiary education and human capital formation, learning outcomes are increasingly threatened by institutional constraints (Federal Ministry of Education, 2022). One such constraints is the poor state of infrastructural facilities. Adeyemi (2021) found that 68% of sampled public secondary schools in southwestern Nigeria had dilapidated classrooms and infrastructural quality significantly predicted students' WASSCE performance ($B= .42$, $p<.01$). Similarly, Olatunde and Ogunode (2020) reported that poor maintenance of desks, laboratories and ventilation correlated with reduced teacher productivity and student concentration in Kwara State secondary schools ($r=.57$, $p< .05$).

However, while most Nigerians studies focus on public schools, empirical data on maintenance infrastructure and its relationship with student's academic performance in private secondary schools remain scarce, particularly in Kwara State. Private schools are widely presumed to be better resourced. (Adebayo, 2009), yet WASSCE data shows declining performance trends among private school's candidates suggesting maintenance problem may not be exclusive to public schools. When the researcher visited a few private secondary schools in Kwara State, he noticed that the grounds were uneven, had broken desks and chairs, uneven flooring, and windows without louvres. Some of the schools had roofs that had blown off, while others had filthy buildings and no lightning. It indicates that the existing school infrastructure is not receiving enough maintenance. School administrators have an obligation to maintain school facilities as close to their original state as feasible.

Moreover, existing studies predominantly examine availability of facilities rather than maintenance practices and utilization (Akinyemi & Gbenu, 2020). The extent to which poor maintenance culture in private schools explain variation in student academic performance in private secondary schools in Kwara State. Consequently, this study seeks to fill this gap by examining the relationship between Maintenance of school infrastructure and students' academic performance in private secondary schools in Kwara State.

Purpose of the Study

The study:

1. examined the state of school infrastructural facilities in private secondary schools in Kwara State;
2. assessed the factors encouraging school infrastructural facilities depreciation in private secondary schools in Kwara state;
3. determined the adequacy of maintenance activities provided for school facilities in private secondary schools in Kwara state;
4. examined the roles of school administrators in the management of school facilities in private secondary schools in Kwara state;
5. find how the level of student' academic performance in private secondary schools in Kwara state;
6. examined the relationship between maintenance of school infrastructure and students' academic performance in private secondary schools in Kwara State;

Research Questions

This study therefore, sought to answer the following research questions.

1. What is the state of school infrastructural facilities in private secondary schools, Kwara State?
2. What are the factors encouraging school infrastructural facilities depreciation in private secondary schools, Kwara State?
3. How adequate are maintenance activities provided for school infrastructural facilities in private secondary schools, Kwara State?
4. What are the roles of school administrators in the management of school infrastructural facilities, Kwara State?
5. What is the level of students' academic performance in private secondary schools, Kwara State?

Hypothesis

The sole hypothesis was formulated for the conduct of the study:

Ho: There is no significant relationship between maintenance of infrastructural facilities and students' academic performance in private secondary schools in Kwara State.

Literature review

This study is anchored on system theory by Ludwig von Bertalanffy (1968) and Educational Production Function theory by Hanushek (1986). System theory view the school as an open system comprising inputs, processes and outputs. Infrastructural facilities are inputs that must be maintained through managerial processes to produce quality education as output. Poor maintenance disrupts the systems equilibrium, leading to diminished academic performance (Akinyemi and Gbenu, 2020). Educational Production Theory posits that educational outcomes are a function of school inputs. Hanushek (1986) argued that the quality and state of physical inputs, including classrooms, libraries and laboratories, significantly predict student achievement when efficiently utilized and maintained. Thus, maintenance is not incidental but a critical production variable.

Maintenance refers to all actions taken to restore facilities to a state in which they can perform required functions (Adebayo, 2022). According to Shaibu et al. (2019), school plant maintenance is any work done on a plant component with the goal of maintaining it in excellent operating order, classified as preventive, corrective, and predictive. Adebayo (2022) asserts that a building's quality and longevity are significantly influenced by the kind and extent of maintenance, repairs, and how quickly needs and requirements change. Maintaining records of school facilities, planning for them, supervising them, encouraging teachers and students to help with upkeep, and assessing the amenities that are provided are all part of managing school facilities. In addition, Aman (2022) stressed that the quality and quantity of educational facilities available within an educational system positively correlates with the quality and standard of the educational system.

Numerous academics, researchers, administrators, and educational planners have attested to the fact that, as a result of the sharp rise in student enrolment, there are not enough facilities in Nigerian schools, and those that exist are being overused. According to Amie-Ogan (2022), just 26% of secondary schools nationwide have sufficient amounts and qualities of school infrastructure. Studies have also shown that the condition of school facilities have a strong effect on academic performance of pupils. Maki (2023) found that students who were taught in modernized buildings scored consistently higher across a range of standardized tests. According to George (2021), student performance was higher in schools with well-coordinated plant planning and maintenance procedures. Students in newer, adequate schools performed better than those in older, deficient schools, according to Otchere et al. (2019). A pleasant physical school environment can have a favourable impact on students' academic achievement, involvement in extracurricular activities, and attendance. School building improvement and maintenance are essential aspects of school plant management and require constant attention and careful planning by administrators. The school head shall undertake the maintenance and minor repair of the school buildings using available funds sub-allotted by the Department of Public Works and Highways based on programs of work prepared and approved by the district/city engineer and concurred by the school head.

Academic performance has been conceptualized in varied but related ways. Olamigoke (2021) defined academic performance as the desired shift in students' behaviour following a period of instruction. Similarly, Isiaka et al. (2022) perceived students' performance as the standard of knowledge and skills which students should attain and demonstrate. From these definitions, two basic dimensions of academic performance are commonly postulated: High academic performance denotes the attainment of set educational standards, reflected in good grades or scores in tests and examination. Conversely, low academic performance implies poor grade or score, indicating failure to meet expected learning outcomes (Isiaka et al., 2022).

In the context of secondary education, academic performance is typically operationalised through students results in standardised examination such as the West African Senior School Certificate Examination (WASSCE), National Examination Council (NECO). These measures are widely used as indicators of student academic performance and have been linked to the quality of infrastructural facilities (Adeyemi, 2021: Fatai et al., 2021; Olatunde & Ogunode, 2020).

From the various reviews of literature on maintenance of infrastructure and students' academic performance; it was submitted that maintenance of infrastructure such as building and school equipment in an organized instruction process play a vital role in the academic performance of students most especially in West African Senior School Certificate Examination. A periodic maintenance of school facilities gives room for effective teaching and learning thereby improving academic performance in school subjects.

Methodology

The study focused on the maintenance of school infrastructural facilities and students' academic performance in private secondary schools in Kwara state. A descriptive correlational survey design was adopted for the study. This study, however, used a correlation survey approach in order to investigate the connection between students' academic achievement in Kwara State's private secondary schools and the upkeep of the state's infrastructure. The population of this study comprised 128 senior secondary schools in the 16 Local Government Area, Kwara State. Random sampling technique was used in the study. Random sampling technique was used to select Fifty (39%) out of 128 senior secondary schools for the study. Also, simple random sampling technique was used at second stage to select 450 (76.4%) principals and teachers in private secondary schools in Kwara State. The sample size for the study was 450 respondents which comprised 50 principals and 400 teachers respectively.

A researcher-designed instrument entitled: "School Infrastructural Facilities Maintenance Questionnaire" (MISQ) was used to collect relevant data from the respondents. MISQ consists of two sections A and B. Section A seeks information on demographic data of the respondents, while section B seeks information on school infrastructural facilities maintenance in the areas of preventive, periodic, corrective and breakdown maintenance. Also, Four-point Likert-type scale was used in analysing the responses of the questionnaire as: Strongly Agree (SA) – 4 points, Agree (A) – 3 points, Disagree (D) – 2 points and Strongly Disagree (SD) – 1 point. Furthermore**,** a checklist entitled: 'Students Academic Performance Checklist'' (SAPC) was used to obtain students' academic performance in Senior School Certificate Examination conducted by West African Examination Council (WAEC) between 2021 and 2025. The instrument was validated by experts in the area of Educational Management and Educational Measurement and Evaluation.

In order to establish the reliability of the instrument, test re-test method was adopted based on the pilot study undertaken. The researcher administered the same instrument on the principals and teachers at an interval of two weeks. The two sets of scores were correlated using Pearson product-moment correlation statistic. A correlation coefficient of .75 was obtained and this was considered as appropriate reliability measure for an instrument of this nature.

Data gathered for the study were statistically analysed using Descriptive statistics such as frequency count, percentage and mean rating to answer the research questions raised in the study while Pearson product-moment correlation statistical method was used to test research hypotheses formulated for the conduct of the study at .05 level of significance.

Results

Research Question 1: **What is the state of school infrastructural facilities in private Secondary schools, Kwara State?**

Table 1: The state of school infrastructural facilities in private secondary schools

S/N	Facilities	Repairable		Disrepair		Total	%
		F	%	F	%		
1	Classroom	393	87	57	13	450	100
2	Assembly hall	366	81	84	19	450	100
3	Laboratory/ workshop	384	85	66	15	450	100
4	Library	391	87	59	13	450	100
5	Furniture	332	74	118	26	450	100
6	Toilet (pit and water system)	344	76	106	24	450	100
	Mean		81		19		

Table 1 indicates the state of school infrastructural facilities in private secondary schools in Kwara State. Majority (81%) of the respondents indicated that facilities in the sampled private secondary schools were repairable while 18% responded that facilities are at the state of disrepair. Furniture and toilet (pit and water) require more attention in order to prolong their usage.

Research Question 2: **What are the factors encouraging school infrastructural facilities depreciation in private secondary schools, Kwara State?**

Table 2: Factors encouraging school infrastructural facilities depreciation in private secondary schools

S/N	Factors	SA	A	D	SD	Mean
1	Excess pressure on available facilities	56	117	190	87	2.32
2	Inadequate maintenance	62	212	98	78	2.57
3	Poor maintenance culture	55	119	175	101	2.28
4	Over centralization of maintenance	66	89	229	66	2.34
5	Delayed maintenance	89	176	116	69	2.63

Table 2 shows that delayed maintenance is the major factor that encourages school infrastructural facilities depreciation with mean of 2.63 while poor maintenance culture was the least with a mean of 2.28. Excess pressure on available facilities, inadequate maintenance and over centralization of maintenance were other factors that encourage infrastructural facilities in Kwara State private secondary schools.

Research Question 3: How adequate are maintenance activities provided for school infrastructural facilities in private secondary schools, Kwara State?

Table 3: Adequacy of maintenance activities provided for school infrastructural facilities

S/N	Maintenance activities	SA	A	D	SD	Mean
1	Cracks on buildings, ceiling & roofs, electric fixtures are easily detected and repaired.	87	186	99	78	2.63
2	Broken chairs and tables are quickly repaired.	67	278	58	47	2.81
3	Damaged louvers, doors and windows are immediately replaced.	118	245	65	22	3.02
4	School generator, bus and duplicating machine are regularly serviced	88	243	99	20	2.89
5	Buildings are regularly renovated.	86	189	98	77	2.63
6	Routine vegetation control is carried out on school premises.	180	215	43	12	3.25

As shown in Table 3, Routine vegetation control is carried out on school premises with mean of 3.25 while cracks on buildings, ceiling & roofs, electric fixtures are easily detected and repaired and buildings are regularly renovated with mean of 2.63. Other maintenance activities include broken chairs and tables are quickly repaired, damaged louvers, doors and windows are immediately replaced and school generator, bus and duplicating machine are regularly serviced.

Research Question 4: What are the roles of school administrators in the management of school infrastructural facilities in Kwara State?

Table 4: Roles of school administrators in the management of school infrastructural facilities

S/N	Roles	Frequency	Rank
1	Periodic inspection of facilities	369	2
2	Delegation of maintenance to committee and school prefects	213	5
3	Preventive maintenance	412	1
4	Emergency maintenance	186	6
5	Keeping records of school facilities	305	3
6	Seeking community participation in facilities management and maintenance	245	4

Table 4 shows the roles of school administrators in the management of school infrastructural facilities in Kwara State. Preventive maintenance was ranked the most with 412 points while emergency maintenance was ranked the least with 186 points. Other roles which are not popular among the respondents are periodic inspection of facilities, delegation of maintenance to committee and school prefects, keeping records of school facilities and seeking community participation in facilities management and maintenance.

Research Question 5: **What is the level of students' academic performance in private secondary schools, Kwara State?**

Table 5: Students' academic performance in private secondary schools

Year	No Enrolled	5 Credits and above including Maths and English Language		Less than 5 Credits including Maths and English Language	
		F	%	F	%
2021	9,235	8,363	90.6	872	9.4
2022	9,799	8,990	91.7	809	8.3
2023	11,006	10,217	92.8	789	7.2
2024	11, 896	11,174	94.0	722	6.0
2025	12,659	11,760	92.9	899	7.1
Total	**54,595**	**50,504**	**92.5**	**4,091**	**7.5**

Based on the results in Table 5, the total enrolment for WASSCE between 2021 and 2025 in Kwara State private secondary schools was 54,595, out of this number, only 50,504 had 5 credits passes and above including Mathematics and English Language. This represents 92.5% of the total enrolment. Further analysis shows that 4,091students out of the number enrolled had less than 5 credits including Mathematics and English Language. This represents 7.5% of the number enrolled for the examination in the years under consideration.

Hypothesis

Ho: **There is no significant relationship between maintenance of infrastructural facilities and students' academic performance in private secondary schools, Kwara State.**

Table 6: Maintenance of infrastructural facilities and students' academic performance

Variable	N	Mean	SD	df	Calculated r-value	Critical r-value	Decision
Maintenance of infrastructural facilities	450	8.13	4.74	448	.762	.195	Ho Rejected
Students' academic performance	450	7.98	3.09				

As shown in Table 6, the calculated r-value (.762) is greater than the critical r-value (.195) at 0.05 level of significance and for 448 degrees of freedom. Hence, the null hypothesis is rejected. This implies that a significant relationship existed between maintenance of infrastructural facilities and students' academic performance in private secondary schools in Kwara State.

Recommendations

The following recommendations based on the study's findings were proffered:

1. Proprietors of schools should ensure the provision of adequate infrastructural facilities in proportion to student enrolment to prevent overutilization.
2. Most of the facilities are in a poor state of disrepair. Hence, school principals should carry out extensive repairs, renovation, retrofitting and replacement of some major components.
3. School administrators, teachers and students should be sensitised and trained to develop a sustainable maintenance culture through regular awareness programmes and institutional policies.
4. School administrators, teachers and students should develop and inculcate good facilities

   maintenance culture.
5. Given the high costs of facility maintenance, school proprietors should allocate adequate budgetary provisions for infrastructure maintenance, including technological support systems.
6. School proprietor should explore alternative funding sources, including partnerships, alumni contributions and community support to enhance the maintenance of school facilities.
7. Preventive maintenance strategies should be institutionalised to ensure early detection and correction of faults, there by extending the life span of school facilities and improving learning conditions.

References

Abdulbaqi, S. Z., Emmanuel, F. S., Isiaq, A. T., & Oladimeji, H. N. (2025). The Impact of Primary Healthcare System on Child Mortality Rates in Selected Health Organizations in North-Central Nigeria. *Sebha University Journal of Human Sciences, 24*(2), 37-41.

Abebe, W. Y. (2020). *Practice and challenges of teaching-learning process in Physical education:* The case of Balch secondary school of Menjar Shenkora Woreda, North Shewa Zone, Amhara Regional State, Ethiopia. A Ph.D. Thesis, Haramaya university.

Aby, A. (2019). *Performance, challenges and potential of public sector undertakings of Kerala since reforms*. A Ph.D. Thesis, Department of Economics, Government College Kodanchery, University of Calicut.

Adebayo, F. A. (2009). Parents' preference for private secondary schools in Nigeria. *International Journal of Education Science, 1*(1), 1-6.

Adebayo, L. A. (2022). *An assessment of the maintenance management of buildings in selected Higher Education Institutions in Nigeria*. A Ph.D. Thesis, University of Johannesburg.

Adeyemi, T. O. (2021). School infrastructure and students' academic performance in public secondary schools in Southwestern Nigeria*. International Journal of Educational Management, 35*(4), 112-128.

Akande, Y. B., Tijani, A. A., Kehinde, A. D., & Oyenpemi, L. O. (2023*).* Impact of compliance with European *Union* (EU) regulations on the income of actors along the cocoa supply chain in Osun state, Nigeria. *Sustainable Futures*, *6*, 100-120.

Akinyemi, I. A., & Gbenu, J. B. (2020). Student enrolment, global utilisation rate and academic performance in public tertiary institutions in Lagos State, Nigeria. *UNIZIK Journal of Educational Management and Policy*, *4*(1), 80-90.

Akorede, S. N., Sani, M., Maina, G., & Isiaq, A. T. (2023). Assessment of healthful school environment among public secondary schools in Sabon Gari Local Government Area, Kaduna State, Nigeria. *Al-hikmah Journal of Education, 10*(2), 23-27.

Aman, I. H. (2022). Educational amenities and students' academic performance in selected secondary schools in Port Harcourt local government area of Rivers Sta*te*.

Amie-Ogan, M. O., & Bikiya, S. (2020). Educational facilities management for public secondary schools academic improvement in the 21st Century.

Bertalanffy, L. V. (1968). *General system theory: Foundations, development, applications.* George Braziller.

Blessing, O. C., & Aituariagbon, K. E. (2019). Factors influencing the effectiveness of school based assessment in public junior secondary schools in Benin City, Edo State. *Benin Journal of Educational Studies*, *25*(1&2), 65-77.

Dahunsi, B. I. O., Adebanjo, A. U., & Thanni, M. O. (2020). Developing an effective maintenance culture for some monumental public school buildings in Ibadan, Oyo State Nigeria. *UNIOSUN Journal of Engineering and Environmental Sciences*, *1*(1), 21-33.

Fatai, K., Oba, A. I., Muhammed, A. O., Afolabi, K. O., Shuaib, S. B., & Jimoh, S. B. (2021). Teachers' perception on factors affecting effective teaching and learning of agricultural science in secondary schools in Ilorin Metropolis, Kwara State, Nigeria. *African Journal of Science, Technology and Mathematics Education, 7*(2), 88–94.

Federal Ministry of Education (2022). *Nigeria education sector analysis.* NERDC.

Federal Republic of Nigeria, (2014). *National policy on education* (6th ed.). NERDC Press.

George, O. (2021). Appraisal of challenges relating to planning, preparation and utilization of facilities in vocational and technical education in Nigeria. *Technical and Vocational Education Journal (TAVEJ)*, *1*, (4) 142-152.

Hanushek, E. A. (1986). The economics of schooling: Production and efficiency in public schools. *journal of Economic Literature, 24(*3), 1141-1177.

Ibrahim, Y. (2023). Relevance of school facilities and infrastructure towards implementing education policies. *Journal of Social Transformation and Regional Development*, *5*(2), 61-67.

Isiaka, B. A., Abdullateef, A. A., & Oyedeji, N. B. (2022). Quality educational planning and senior secondary education goal attainment in Ilorin Metropolis, Kwara State. *Kashere Journal of Education*, *3*(1), 40-48.

Islam, M. N. (2021). Study habits, self-esteem, and academic achievement among public and private secondary school students in Bangladesh. *International Journal of Psychology and Educational Studies*, *8*(3), 39-50.

Joint Admissions and Matriculation Board. (2023). 2023 UTME statistical report. JAMB.

Junaid, S. B., Imam, A. A., Balogun, A. O., De Silva, L. C., Surakat, Y. A., Kumar, G., ... & Mahamad, S. (2022, October). Recent advancements in emerging technologies for healthcare management systems: *Healthcare 10(*10), 19-40.

Kehinde, M. O. (2021). *Availability, utilization and maintenance of ICT facilities for teaching and learning business subjects in secondary schools*. A Ph.D. Thesis, Kwara State University, Malete, Nigeria. (Doctoral dissertation, Kwara State University (Nigeria)).

Kayenda, S. (2022). *Supervision and implementation of home economics and hospitality in the revised curriculum in selected government secondary schools in Solwezi district*. A Ph.D. Thesis, University of Zambia.

Maki, P. L. (2023). *Assessing for learning: Building a sustainable commitment across the institution*. Routledge.

Matthew, O. (2021). *Assessment of institutional factors and quality of graduates variables in Selected Federal Universities in Southwestern Nigeria*. (Doctoral dissertation).

Okoji, O. O. (2022). Learning environment and adult learners' academic performance in literacy education centres, Ilorin Metropolis. *Journal of Pedagogy, Andragogy and Heutagogy in Academic Practice*, *3*(1), 28-42.

Olamigoke, G. O. (2021). *Effects of computer graphics and animation instructional modes on junior secondary students 'academic achievement and skill acquisition in business studies in Ibadan, Nigeria* (Doctoral dissertation).

Olatunde-Aiyedun, T.G., & Ogunode, N. J. (2020). *School plant maintenance and teachers' job productivity in secondary schools in Kwara State, Nigeria_European Journal of Education Studies, 7*(8), 221-235.

Otchere, S. N., Afari, J. B., & Kudawes, C. (2019). Examining the relationship between school facilities and the learning environment: A case study of Oda Senior High School. *Journal of Education and Practice*, *19*(26), 21-39.

Shaibu, L., Edegbo, C., & Ishaka, M. L. (2019). Problems and strategies for the management of school facilities for effective instructional delivery in federal and state Colleges of Education in North-central States of Nigeria. *Ewemen Journal of Education Research and Review*, *11*, 11-19.