

ANALYSIS OF STUDENTS' BASIC SCIENCE AND TECHNOLOGY PERFORMANCE IN BASIC EDUCATION CERTIFICATE EXAMINATION IN JOS NORTH, PLATEAU STATE, NIGERIA.

¹Ayuba Bayara Kabang (Ph.D.) & ²Kyenret Ayuba Kabang

¹Department of Science and Technology Education, University of Jos, Nigeria.

²Department of Science Education, Taraba State University, Jalingo, Nigeria.

Email: ¹kabangayuba@gmail.com, ²sandraayuba309@gmail.com

ABSTRACT

The study investigated the analysis of students' Basic Science and Technology performance in Basic Education Certificate Examination in Jos North, Plateau State, Nigeria. The researchers formulated three research questions and two hypotheses to guide the study. The study adopted the descriptive exploratory research design. The population of the study comprised of all the students that sat for Basic Education Certificate Examination (BECE) for the past five years (2019 to 2023) from the 22 public secondary schools and 229 private secondary schools in Jos North Local Government Area of Plateau State, Nigeria. The sample of the study comprised of five public and five private secondary schools. The instrument used for data collection was the schools' records BECE results from 2019 to 2023. The three research questions were answered using simple percentages while the two hypotheses were tested using t-test at 0.05 level of significance. The findings revealed that the trend of BECE Performance follows the same pattern from 2022 to 2023 but no clear pattern of performance was found from 2019 to 2021. Public schools show a major variability and inconsistency over time when compared with private schools which maintain relatively stable performance levels. There are notable differences between urban and rural school performances from year to year, with urban schools showing significant improvement toward high performance passed. The study recommends that stakeholders in the study area should encourage to ensure equitable distribution of resources in terms of infrastructure, recruitment of adequate and competent teachers to both rural and urban schools to enhance students' performance in BECE among others.

Keywords; Basic Science and Technology, Analysis, Basic Education Certificate Examination, performance

BACKGROUND

The influence of science on national development has significantly shaped human decision-making in various sectors, including agriculture, healthcare, transportation, communication, and population growth. This is because, without scientific knowledge, individuals lack the fundamental tools required to make informed decisions in these areas. Consequently, advancements in science have had a direct impact on science education. Naturally, disciplines such as Basic Science and Technology have also been influenced by these developments.

Basic Science and Technology serves as the foundation for advanced science courses at both the senior secondary and tertiary education levels in Nigeria. According to Chikaodinaka (2024), Basic Science and Technology forms the cornerstone of scientific knowledge and technological progress, equipping learners with the necessary knowledge, attitudes, and skills to drive innovation and address modern challenges. The National Policy on Education (FRN, 2014) highlights key objectives of Basic Science and Technology, including value orientation, poverty alleviation, job creation, wealth generation, and economic empowerment, all of which contribute to national development. Furthermore, this policy places special emphasis on Science and Technology education and the promotion of scientific literacy among citizens.

To achieve these goals, the government, through various organizations, has taken initiatives such as hiring qualified teachers, organizing seminars and workshops, and establishing Teachers' Resource Centers in all states to support both human and material resources for educators. These efforts aim to improve student performance in internal and public examinations. Despite these

interventions, complete success has yet to be achieved. Numerous strategies have been introduced to address the challenges of underperformance in science education, leading to studies that explore alternative instructional approaches to overcome the limitations of conventional teaching methods. Students who complete basic education in Nigeria take a national examination known as the Basic Education Certificate Examination (BECE) (PBEA, 2018). This certification is awarded to students who successfully pass the examination after completing the nine-year basic education program. Assessment is based on a combination of external examination scores (70%) and internal school-based evaluations (30%). Candidates are graded on a nine-point scale, with A1 representing the highest performance and F9 the lowest.

Over the years, academic performance at the basic education level in Nigeria has declined. Data from 2006 to 2016 shows that out of 3,669,138 BECE candidates, 1,562,270 (43.9%) failed to meet the required grade threshold (an aggregate score of 30 or above) necessary for progression to secondary, technical, or vocational schools. Additionally, in 2017, 36,849 students (3%) across Nigeria were unable to advance to senior secondary school because they scored F9 in English, Mathematics, or both (PBEA, 2018). In response to these challenges, the Plateau Basic Education Authority introduced a re-sit policy for students who fail the BECE. Research has identified various factors contributing to poor academic performance, including inadequate infrastructure, lack of instructional materials, student absenteeism, minimal parental involvement, unsuitable learning environments, and issues related to teacher quality (Alhasan, 2016).

Despite continuous efforts to enhance the accessibility and quality of basic education, significant disparities remain in educational facilities across the country. The most pronounced divide exists between urban and rural schools, particularly in terms of infrastructure. Urban students benefit from better-equipped classrooms, teaching resources, and access to computers and the internet (PBEA, 2018). In contrast, rural schools frequently suffer from inadequate teaching staff, poorly constructed classrooms, and, in some cases, lessons conducted under trees. This situation makes learning difficult, particularly during the rainy season. Alarming, some students in rural areas study in severely dilapidated school buildings (PBEA, 2015). For example, a news report from the National Directorate Office in Jos-North highlighted the concerning number of schools operating under trees and in deteriorating conditions (PBEA, 2015).

The State Basic Education Board has expressed concern that in many rural schools, the mere sight of rain clouds forces academic activities to be halted for the safety of teachers and students. As a result, these schools often fall behind in the curriculum, especially during the rainy season. Moreover, external distractions are high when classes are conducted outdoors, and mobile chalkboards used in these makeshift classrooms are often too small to accommodate detailed illustrations or display teaching-learning materials (PBEA, 2018).

Regarding teacher qualifications, data from the Plateau Basic Education Authority (2018) indicates that 71.1% of Junior Secondary School teachers in both public and private institutions have received training, while 28.9% remain untrained. Public Junior Secondary Schools have a higher percentage of trained teachers (89.6%) compared to private schools (18.7%). However, despite this, students in private schools tend to outperform their counterparts in public schools on the BECE. While Nigeria has made progress in expanding access to basic education in public schools, concerns persist about the low academic performance of students in government institutions. This trend may be attributed to the government's emphasis on increasing enrollment rather than prioritizing educational quality (FRN, 2015). It is important to note that quality education determines the depth of students' learning and how effectively it translates into personal, social, and developmental gains (FRN, 2015). Consequently, while many students are enrolled in school, inadequate education delivery often results in low academic achievement.

STATEMENT OF THE PROBLEM

Junior Secondary Schools in Jos North L.G.A were selected as the focus of this study for three key reasons. First, Jos North is among the areas where students consistently perform poorly in the BECE.

A report by the Plateau Basic Education Authority Office, Jos North (2018), highlighted that most Junior Secondary Schools in the region recorded low scores in Basic Science and Technology in the 2018 BECE. The past results of BECE candidates in Jos North L.G.A indicate that many students do not meet the required qualifications for placement in senior secondary classes, technical schools, or vocational institutions. Additionally, nearly half of the students in secondary schools within Jos North have not attained the minimum competency standards set by the Basic Science and Technology curriculum. These concerns underscore the need to examine the performance trends of BECE candidates in the region.

Secondly, Junior Secondary Schools in Jos North L.G.A face significant disparities in educational inputs and processes. The allocation of resources is inconsistent across rural and urban schools, as well as between public and private institutions. This raises the question of whether such disparities influence students' BECE performance in the region. While previous studies have analyzed BECE performance trends in other deprived areas, Jos North L.G.A has received little attention in this regard. Existing research has extensively documented BECE performance across different parts of the state; however, there is limited literature examining how school location (urban/rural) and school type (public/private) impact student outcomes in Jos North. This study aims to bridge that gap by analyzing the BECE achievement trends of Junior Secondary School students in Jos North L.G.A over a five-year period (2019–2023).

This research provides a comprehensive analysis of BECE performance trends using Junior Secondary Schools in Jos North L.G.A as a case study. Such an approach is essential for understanding performance patterns in relation to different school contexts, including urban, rural, public, and private settings. While previous studies have explored performance trends in core mathematics and science at the Senior Secondary level, they have largely been limited to these subjects. Unlike those studies, this research focuses specifically on BECE performance trends at the Junior Secondary level over a five-year period. The objective of this study is to analyze the Basic Education Certificate Examination performance of Junior Secondary III students in Jos North Local Government Area of Plateau State.

AIM AND OBJECTIVES OF THE STUDY

The aim of this study is to investigate the analysis of Basic Education Certificate Examination achievement in Junior secondary III students in Jos North Local Government Area of Plateau State. Specifically, it aims at:

1. Explore the general BECE achievement trends of JSS II students in Junior Secondary schools from 2019-2023 in Jos North L.G.A.
2. Investigate the variations in BECE achievement trends of JSS III students in Junior Secondary schools in the rural and urban location in Jos North L.G.A.
3. Examine the variability in BECE achievement trends of JSS III students in Junior Secondary schools based on school types in Jos North L.G.A.

RESEARCH QUESTIONS

1. What is the general BECE achievement trends of JSS III students in Junior Secondary schools from 2019-2023 in Jos North L.G.A.
2. What is the variations in BECE achievement trends of JSS III students in Junior Secondary schools based on rural and urban location in Jos North L.G.A?
3. What is the variability in BECE achievement trends of JSS III students in Junior Secondary schools based on school type in Jos North L. G.A?

HYPOTHESES

The following hypotheses will be tested in this study:

1. There is no significant difference in BECE achievement trends of JSS III students in Junior Secondary schools based on school location or rural and urban IN Jos North L. G. A.

2. There is no significant difference in BECE achievement trends of JSS III students in Junior Secondary schools based on school types in Jos North L. G. A.

METHODOLOGY

This study adopted a descriptive exploratory design, as it aimed to analyze Basic Education Certificate Examination (BECE) performance trends among Junior Secondary III students in Jos North Local Government Area (L.G.A.) of Plateau State over a five-year period (2019–2023) without any form of manipulation. The study population included all students who sat for the BECE between 2019 and 2023 across the 22 public and 229 private secondary schools in Jos North L.G.A. of Plateau State.

A sample of ten public and private secondary schools was selected, comprising five schools from urban areas and five from rural areas within Jos North L.G.A. The study employed a stratified sampling technique to ensure representation from both rural and urban settings, selecting five private and five public schools. Following stratification, a simple random sampling technique was used to finalize the selection of schools, ensuring that every subject in the population had an equal chance of participation.

The study utilized school records (BECE results) in Basic Science and Technology from the selected secondary schools over the five-year period (2019–2023). These records were obtained from the Department of Planning, Research, and Statistics at the National Directorate Office in Jos North L.G.A., Plateau State, as well as from the selected schools. The BECE results collected from these official sources were assumed to be valid and reliable.

To assess the reliability of the research instruments, a stability and consistency test was conducted. A trial testing of the instrument was carried out using the Kuder-Richardson Formula 20 (K-R 20), yielding a reliability coefficient index of 0.81. The BECE results were then analyzed to determine the proportion of students who successfully passed the examination. Performance was measured based on passing rates, with grades ranging from A to F. Students who obtained grades A to E were classified as having passed the BECE, while those who scored below an E (i.e., F) were considered to have failed.

The collected data were summarized using percentages, frequency counts, and means. The performance trends were analyzed based on school location (rural vs. urban) and school type (private vs. public), as these were the primary units of analysis. The study examined both students who passed and those who failed, categorizing students with grades lower than E (below 40%) as having failed the examination. Research questions were addressed using simple percentage analysis, frequency distribution, and mean calculations. Additionally, the study employed a t-test to test the hypotheses at a 0.05 level of significance.

RESULTS

Research Question One

What is the general BECE achievement trends of JSS III students in Junior Secondary schools from 2019 - 2023 in Jos North L.G.A?

Table 1: General BECE achievement trends of JSS III students in Junior Secondary schools

Year	N	CREDIT (%)	Pass (%)	FAIL (%)
2019	1369	1148 (84%)	199 (14%)	22 (2%)
2020	1365	809(59%)	541 (40%)	15 (1%)
2021	1191	983 (83%)	194 (16%)	14 (1%)
2022	997	867 (87%)	118 (12%)	12 (1%)
2023	988	732 (74%)	208 (21%)	48 (5%)

The data in Table 1 reveals that the number of students who sat for BECE from 2019 to 2023 range from 2,561 to 988. It appears that the proportion of students who got credit and passed

in each year were more than those who failed. In 2019 for instance, 1148 (84%) students out of 1369 got credit and 119(14%) passed the examination. Similarly, 809 (59%) students out of 2,652 got credit and 541(40%) in 2020 passed; and 983(83%) out of 1191 got credit and 194(16%) passed in 2021. This trend follows the same pattern from 2022 to 2023.

The overall BECE performance trends of JSS III students in Junior Secondary Schools from 2019 to 2023 reveal fluctuations in achievement levels. The trends are based on the proportion of students who passed the examination during this five-year period.

Among the five years studied, 2022 recorded the highest percentage of students who achieved credit-level scores in the BECE, with 87% of candidates meeting this benchmark. In contrast, 2020 had the highest percentage of students who passed the BECE overall, at 40%. Meanwhile, 2023 recorded the highest failure rate, with 5% of students failing the examination.

No clear pattern of performance emerged across the years. In 2020, there was a notable decline in the credit rate compared to 2019, dropping from 84% to 59%. The pass rate, however, saw an increase from 14% in 2019 to 40% in 2020, before declining again to 16% in 2021. This downward trend continued in 2022, where the pass rate fell to 12%, before rising again to 21% in 2023.

Research Question Two

What is the variations in BECE achievement trends of JSS III students in Junior Secondary schools based on rural and urban location in Jos North?

Table 2: BECE achievement trends of JSS III students in Junior Secondary schools in Jos based on rural and urban location in Jos North L.G.A

YEAR	N	Urban schools				N	Rural schools
PASS (%)	FAIL (%)	CREDIT (%)	PASS (%)	FAIL (%)			CREDIT (%)
2019	951	850 (89%)	82(9%)	19 (2%)	418	298 (71%)	117
(28%)	3 (1%)						
2020	929	473 (51%)	445 (48%)	11 (1%)	603	511 (85%)	84 (14%)
8 (1%)							
2021	749	604 (81%)	134 (18%)	11 (1%)	553	432 (78%)	84 (15%)
37 (7%)							
2022	436	336 (77%)	96 (22%)	4 (1%)	394	356 (90%)	34 (9%)
4 (1%)							
20 23	442	379 (86%)	60 (13%)	3 (1%)	435	300 (69%)	124
(29%)	11 (2%)						

Table 2 presents the BECE performance results of students in rural and urban schools. From 2019 to 2023, students who sat for BECE in the selected rural schools ranged from 418 to 603, and those in the urban schools ranged from 436 to 951. In general, the data suggested that more students in the urban than rural schools sat for BECE from 2019-2023. This translated into the proportion of students who passed the examination.

Urban Schools showed fluctuations in performance but generally improved from a low passing rate of only 51% in 2020, rising to 86% in 2023. The failure rate decreased significantly over this period. Rural Schools, while starting strong with a passing rate. of 71% in 2019, also saw improvements, peaking at a passing rate of 90% in 2022, but dropped to 69% in the latest year, indicating some inconsistency. Urban schools improved their passing rates significantly from an average of around 51% in 2020 to 86% in 2023, while rural schools peaked at 90% in 2022 but fell to 69% in 2023. In general, urban schools had lower passing' rates compared to rural schools initially but have shown significant improvement by the end of the observed period. The overall trend

indicates that while both urban and rural schools have made strides in improving student performance, urban schools have made more substantial gains over time.

Research Question Three

What is the variability in BECE achievement trends of ISS III students in Junior Secondary Schools based on school type in Jos North L.G.A?

Table 3: BECE achievement trends of JSS III students in Junior Secondary schools based on school type in Jos North L.G.A

Public Schools								Private Schools	
YEAR	N	CREDIT (%)	PASS (%)	FAIL (%)	N	CREDIT (%)	PASS		
(%)	FAIL (%)								
2019	951	850 (89%)	82 (9%)	19 (2%)	418	298 (71%)	117 (28%)		
3 (1%)									
2020	929	473 (51%)	445 (48%)	11 (1%)	436	336 (77%)	96 (22%)		
4 (1%)									
2021	749	604 (81%)	134 (18%)	11 (1%)	442	379 (86%)	60 (13%)		
3 (1%)									
2022	603	511 (85%)	84 (14%)	8 (1%)	394	356 (90%)	34 (9%)		
4 (1%)									
2023	553	432 (78%)	84 (15%)	37 (7%)	435	300 (69%)	124 (29%)		
11 (2%)									

The results in Table 3 depict that more than twice the number of students who sat for BECE from 2019 to 2023 are from public schools. In 2019, for example, 951 students from public schools sat for the examination. In the same year, 418 students from private schools sat for the examination. For 2020, 436 students who sat for BECE were from private schools whereas 929 of them were from public schools. The trend of performance was not so different for 2021, 2022, and 2023.

The table shows no clear trend in the BECE performance of students based on school type. From the data for public schools: In 2019, there was a high credit rate (89%) with only a small percentage failing (2%). However, in 2020, there was a significant drop in performance with only about half achieving credit (51%). The trend improved again in subsequent years (2021 and 2022) with pass rates stabilizing around the mid to high eighties. In 2023, there was another decline with only about three-fourths achieving credit (78%). This indicates considerable variability in performance year-on-year for public schools.

For private schools: The perform appears more consistent overall compared to public schools. Starting from a strong base in 2019. where nearly three-fourths achieved credit. There was slight fluctuation but generally maintained higher pass rates than public schools throughout the years. Notably, while there were dips such as in 2023, where only about thirds achieved credit (69%), they still performed better than their public counterparts during most years. Public schools exhibited greater variability with significant fluctuations between years. For instance: A drop from an impressive performance in 2019 to 51% passing rate in 2020. Recovery followed by another decline suggests instability. Private schools showed more stable trends with less drastic changes year-to-year. Their lowest passing rate was still higher than that of public schools during several years.

Hypothesis One

There is no significant difference in BECE achievement trends of JSS III students in Junior Secondary schools based on school location (rural and urban) in Jos North L.G.A.

Table 4: Summary of t-test Analysis of the difference in BECE achievement trends of JSS III students based on school location (rural and urban)

School Location	N	M	SD	df	t=cal	t=tab	decision
Urban	3507	1.65	7.07	5908	2.020	1.962	Rejected
Rural	2403	1.98	5.00				

0.05 level of significance

Table 4 shows the t-test comparison of the difference in BECE achievement trends of JSS III students based on school location (rural and urban). The table shows that t-calculated value (2.020) is greater than t-tabulated value (1.962). Therefore, the null hypothesis one was rejected. This confirmed that there is significant difference in BECE achievement trends of JSS III students in Junior Secondary schools in Jos North L.G.A based on school location (rural and urban).

Hypothesis Two

There is no significant difference in BECE achievement trends of JSS III students in Junior Secondary schools based on school type in Jos North L.G. A.

Table 5: Summary of t-test Analysis of the difference in BECE achievement trends of JSS III students based on school type (private and public)

School Type	N	M	SD	df	t –cal	t-ta
Public	3785	1.74	9.62	5908	1.895	1.962
Private	2125	1.77	5.70			

0.05 level of significance

Table 5 shows the t-test comparison of the difference in BECE achievement trends of JSS III students based on school type (private and public). The table shows that t-calculated value (1.895) is less than t-tabulated value (1.962). Therefore, the null hypothesis two was accepted. This confirmed that no significant difference in BECE achievement trends of JSS III students in Junior Secondary schools in Jos North L.G.A based on school type (private and public).

DISCUSSION OF FINDINGS

The results from the analysis of research question one reveals that the number of students who sat for BECE from 2019 to 2023 range from 2,561 to 988. It appears that the proportion of students who got credit and passed in each year were more than those who failed. In 2019 for instance, 1148 (84%) students out of 1369 got credit and 119(14%) passed the examination. Similarly, 809 (59%) students out of 2,652 got credit and 541(40%) in 2020 Passed, 983(83%) out of 1191 got credit and 194(16%) passed in 2021. This trend follow pattern from 2022 to 2023. For the five years under study, year 2022 recorded percentage of students who got, credit in the BECE (87%). Year. 2020 recorded the highest percentage of students who passed the BECE (40%), Year 2023 recorded

the highest percentage of students who failed the BECE (5%). No clear pattern of performance was found. The year 2020 saw a decrease in credit rate from the previous year (2019) from 84% to 59%. There was a slight increase in pass rate to 40% in 2020 from 14% and further decreased to 16% in 2021. The percentage of students who passed further decreased again to 12% in 2022 and increased to 18% in 2023. This finding disagrees with Nwoji (2010) and Demid (2011) who revealed that there are evidences which show students poor achievement with high failure in Integrated Science at the Junior Secondary School level.

Findings from the analysis of research question two presents the BECE performance results of students in rural and urban schools. From 2019 to 2023, students who sat for BECE in the selected rural schools ranged from 418 to 603, and those in the urban schools ranged from 436 to 951. In general, the data suggested that more students in the urban than rural schools sat for BECE from 2019-2023. This translated into the proportion of students who passed the examination. Urban Schools showed fluctuations in performance but generally improved from a low passing rate of only 51% in 2020, rising to 86% in 2023. The failure rate decreased significantly over this period. Rural Schools, while starting strong with a passing rate of 71% in 2019, also saw improvements, peaking at a passing rate of 90% in 2022, but dropped to 69% in the latest year, indicating some inconsistency. Urban schools improved their passing rates significantly from an average of around 51.9% in 2020 to 86% in 2023, while rural schools peaked at 90% in 2022 but fell to 69% in 2023. In general, urban school had lower passing rates compared to rural schools initially but have shown significant improvement by the end of the observed period. The overall trend indicates that while both urban and rural schools have made strides in improving student performance, urban schools have made more substantial gains over time. Test for hypothesis one confirmed that there is slight difference in BECE achievement trends of JSS I students in Junior Secondary schools in Jos North L.G.A based on school location (rural and urban). This finding agrees with that of Alhassan (2016) which showed that students in urban schools performed better in BECE than their colleagues in rural schools.

The results from the analysis of research question three depicts that, more than twice the number of students who sat for BECE from 2019 to 2023 are from public schools. In 2019, for example, 951 students from public schools sat for the examination. In the same year, 418 students from private schools sat for the examination. For 2020, 436 students who sat for BECE were from private schools whereas 929 of them were from public schools. The trend of performance was not so different for 2021, 2022, and 2023. The table shows no clear trend in the BECE performance of students based on school type. From the data for public schools: In 2019, there was a high credit rate (89%) with only a small percentage failing (2%). However, in 2020, there was a significant drop in performance with only about half achieving credit (51%). The trend improved again in subsequent years (2021 and 2022) with pass rates stabilizing around the mid to high eighties. In 2023, there was another decline with only about three-fourths achieving credit (79%) This indicates considerable variability in performance year-on-year for public schools for private schools: The performance appears more consistent overall compared to public schools. Starting from a strong base in 2019, where nearly three-fourths achieved credit (71%). There was slight fluctuation but generally maintained higher pass rates than public schools throughout the years. Notably, while there were dips such as in 2023, where only about two-thirds achieved credit (69%), they still performed better than their public counterparts during most years. Public schools exhibited greater variability with significant fluctuations between years. For instance: A drop from an impressive performance 'in 2019 to 51% passing rate in 2020. Recovery followed by another decline suggests instability. Private schools showed more stable trends with less drastic changes year-to-year. Their lowest passing rate was still higher than that of public schools during several years. Test for hypothesis two confirmed that there is no significant difference in BECE achievement trends of JSS II students in Junior Secondary schools in Jos North L.G.A based on school type (i.e., private and public). This finding disagrees with Studies by Alhassan (2016) and Okyerefo et al. (2011) where

they observed that students in private schools performed better in BECE than their colleagues in public school.

CONCLUSION

The findings of this study establish that BECE achievement trends in Junior Secondary Schools in Jos North L.G.A from 2022 to 2023 followed a similar pattern, while no clear pattern was observed between 2019 and 2021.

Public schools in Jos North L.G.A demonstrated greater variability and inconsistency over time, whereas private schools maintained a relatively stable performance level. The results also indicate notable differences between urban and rural school performances, with urban schools in Jos North L.G.A showing significant improvement in passing rates over the years.

The study confirms that there is a slight difference in BECE achievement trends of JSS III students in Jos North L.G.A based on school location (rural vs. urban). Urban schools, as well as public schools, performed better overall during the study period. This suggests that schools in urban areas of Jos North L.G.A may benefit from better input and process factors that contribute to higher student achievement.

Furthermore, the study found no significant difference in BECE achievement trends of JSS III students in Jos North L.G.A based on school type (private vs. public). This highlights the need to reassess resource distribution and monitor educational quality to ensure equitable opportunities for all students in the region.

In light of these findings, it is crucial to bridge the performance gap caused by geographical and school ownership disparities in Jos North L.G.A. All students deserve equal access to quality education, regardless of their school location or type. Therefore, policy interventions should focus on ensuring fair resource allocation and continuous improvement in the quality of education across Jos North L.G.A.

RECOMMENDATIONS

The following recommendations were made based on the study.

1. Stakeholders in the area of education are encouraged to ensure equitable distribution of infrastructure, teaching and learning resources, and competent teachers across both urban and rural schools to enhance students' performance in the BECE examination.
2. Head teachers and administrators of both private and public schools should actively seek and implement strategies to enhance students' performance in the BECE. Encouraging collaboration, innovation, and best practices will contribute to overall academic improvement.
3. Teachers should adopt an integrative approach when teaching Basic Science and Technology to help students understand the interrelationships between different scientific concepts. This method will promote better knowledge retention, practical application, and improved achievement in the BECE.

REFERENCES

Alhassan, I. (2016). A comparative assessment of the academic performance among public and private junior high schools in the Tamale Metropolis of Ghana. A thesis submitted to the Department of Planning, Kwame Nkrumah University of Science and Technology, Ghana.

Basic Education Certificate Examinations (2015). WAEC Ghana. The West African Examinations Council, Ghana. Archived from the original on 2014-05-19. Retrieved 4 July 2015.

BECE (2023): Basic Education Certificate Examination". 2021-10-20. Retrieved 2023-08-12

- Chikaodinaka, O. A. (2024) Technological tools for enhancing Basic Science and teaching and learning in Upper Basic Education. Proceedings of the 64th STAN Annual Conference 1(1), 50-53.
- Demide, C.O. (2011) Effect of Previous Knowledge on Students Cognition, Comprehension and achievement in Some Content Areas in Chemistry, Unpublished Ph.D thesis, Abubakar Tafawa Balewa University, Bauchi.
- Federal Government of Nigeria (2014) National Policy on Education. NERDC Press Lagos.
- Federal Government of Nigeria (2011). National Policy on Science and Technology. NERDC Press Lagos-Lagos.
- Idowu, C. B. (2011). Students' performance in the environmental aspect of integrated science. A case study of Oyo State College of Education, Oyo. *Journal of Science Technology and Mathematics 1*(1), 50-57
- Nwagbo, C. R. (2006). Effects of Two Teaching Methods on the achievement and attitude to Biology of Students of Different Levels of Scientific literacy. *International Journal of Educational Research 45* (2), 216- 229.
- Nwoji, Q. J. R. (2010). Improving the teaching and Learning of Introductory Technology through the use of Media. In Akale, A.M. G.(Ed), 41st Annual Conference Proceedings of STAN on enriching Science Technology and Mathematics education, 402-405. Ibadan Heinemann.
- Okyerefo, M. P. K., Fiaveh, D. Y., & Lamptey, S. N. L. (2011). Factors prompting pupils' academic performance in privately owned junior high schools in Accra, Ghana. *International Journal of Sociology and Anthropology, 3* (8), 280-289.
- Örankotan, A. F. (2004). Meta-cognitive Instructional Strategies of framing and rehearsals on students' learning outcome in secondary school Genetics. Unpublished Ph.D. Thesis, University of Ibadan. Ibadan
- Plateau State Basic Education Authority (2015). My NECO Examination. National Examination Council, Nigeria. Retrieved 30 May 2025.
- Plateau State Basic Education Authority (2018) My NECO Exam. National Examination Council, Nigeria. Retrieved 30 May 2018.