

RESOURCE MATERIALS AND STUDENT'S ACADEMIC ACHIEVEMENT IN GEOGRAPHY IN SECONDARY SCHOOLS IN JOS NORTH PLATEAU STATE

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Abstract

This study evaluates resource materials and students' academic achievement in Geography in secondary schools in Jos North, Plateau State. The researcher raised two research questions the population of the study consist of 22 private secondary schools and 229 public secondary schools in Plateau State. A sample of 275 was selected which consisted of geography students and teachers. A proportional stratified sampling technique was used to select the secondary schools. Descriptive survey research design was used, checklist and questionnaire constituted the instruments of the study. The validity of the instrument was determined by expert. The reliability of the checklist, questionnaire and students record were ascertained using cronbach Alpha, which yielded a reliability coefficient of 0.69. Percentage and t-test were used for the analysis. The result showed that there was an inadequate resource material for the teaching and learning of geography in secondary schools. The result indicated that the available resource materials were below 50 per cent of the recommended Geography resource materials. The academic achievement of students in Geography is average. The study concluded that the inadequate and average academic achievement of students in Geography could lead to difficulty in providing conducive learning environment and ineffectiveness of teaching and learning Geography. The recommendation of the study was that the Plateau State post primary school service commission should support effective geography resources materials in the secondary schools through making provision for those resources needed through liaison with the State government and non-governmental agencies in order to provide schools with the required resource materials like Stephenson screen, barometer, barograph, wet and dry bulb thermometer, anemometer, Geography lab, wind vane, sunshine recorder, rain gauge, projector, hygrometer, rock cycle and weather station, to aid teaching of Geography

Introduction

Geography is a social science subject which deals with the study of man, his activities and his environment. Its relevance cuts across many other subjects like Economics, Agricultural science, Government, History. It is concerned with the study of the size, shape and movement of the earth and other heavenly bodies, landmass, bodies of water, climate, vegetation and events in different places of the world. It also deals with the spatial distribution of animal and natural resources as well as human activities. According to Onyango (2019), Geography as a discipline enables learners to understand, master and utilize the available resources in their environment, to carry out different economic activities such as agriculture, fishing, lumbering, beekeeping, mining activities and forestry. Geography is believed to provide necessary content or materials for every individual to succeed since it describes the reality of day to day life of human beings. Reinfried and Hertig (2011) argued that Geography is concerned with human-environment interactions in various contexts.

Consequently, it relates to various aspects of life hence, imparting critical skills and knowledge in learners. It help learners to apply such knowledge to different economic activities within their locality that assists improve lives. To effectively achieve these objectives of learning Geography, availability of instructional materials should be a key concern. Aydin (2011) pointed

out that Geography is a very interesting subject for students in secondary schools if lessons are invigorated with various in-and-out of school activities. Geography is offered at the senior secondary level and the objectives of teaching and learning the subject were obtained by the West African Examination Council [WAEC] (2014), Nigeria Educational Research and Development Council [NERDC] (2005) and also the National Examination Council [NECO] (2010). The objective of Geography education includes: to acquire a basic knowledge of the nature and functioning of physical and human environment particularly in understanding their inter-relationship and the resulting issues and condition; to understand the concept of man-environment relation; to examine the life of man within his physical, social and cultural environment and to explain their interaction, understanding the concept of different characters and the spatial relationship of the surface features of the earth; to develop skills and techniques for accurate, orderly and objective geographical investigation in the classroom and in the immediate environment; to organize and formulate principles according to acquired geographical concept and to apply these principles to interpret and analyze spatial problems in the immediate and wider environment. The above objectives are aimed at making the students to understand man with emphasis in area differentiation, human activities and to make them to be better informed about their immediate environment.

The achievement of these objectives will not be possible if material resources are not available and properly utilized in the secondary schools. Researchers and stakeholders in the education sector like Olulube (2006), Ugwuanyi (2013), Wanjiku (2013) have come to terms and realization that material resources are very crucial for all round development of individual competences within the school environment. Coker and Coker cited in Shehu and Mohammed (2014) are also of the view that effective teaching and human development require that students be offered the best possible chances to learn, regardless of the nature of their individual preferences. The importance and benefits of educational resources to teachers' productivity in the school environment cannot therefore, be over-emphasized.

The availability and utilization of resources in school is important in achievement of its goals and objectives of education. Students learning outcome is influenced by appropriate management of school resources. Investing in educational resources is the key to ensuring that schools become institutions where students work together, learn from each other and benefit from a supportive school environment, and consequently maximize student learning so that all students achieve their full learning potential (Mugure, 2012). The availability or non-availability of these materials in secondary schools in Jos North Local Government are likely to affect the academic performance of the students.

Availability, as defined by Qadir and Quadri (2016), means enabling access to authorized information or resources to those who need them. It is the ability to make information and related physical resources accessible as needed, when they are needed, and where they are needed. Availability is the capability of an education system or its authorities to make resources available, including all the logical and physical resources reachable and accessible wherever and whenever they are needed. The following resource materials identified by the researcher are among those for teaching Geography at secondary school level: Graphic materials such as map, atlas, globe, map of Nigeria, topographical map, contour map, profile chart, Weather instruments such as: hygrometer, barometer, thermometer, rain gauge wind vane. Audio visual materials such as: computer, television, photo, slide, projector, radio tap and among others; Printed materials such as: reference book, teachers' manual, text book newspaper magazine and among others; Local materials such as: mud, stone, soil type, rock type and among others.

Resource materials are materials that enable teaching and learning activities and subsequently the attainment of the lesson objectives. Their relevance in the secondary school

system cannot be over emphasized. Anything a teacher uses to achieve instructional objectives is called a resource. According to Ehiamelator (as cited in Dodo, Ajiki&Abimuku 2010), material resources is operational inputs of instructional programme. That is to say, they are inputs which aid the teacher to achieve some level of instructional efficiency and effectiveness. The Federal Ministry of Education (FME, 2000), identified these school material resources to include the classrooms, libraries, laboratories, books, workshops, school buildings, playfields, school farms, gardens, electrical fixtures, the school environment, toilet facilities and portable water. Resource materials should be available for secondary schools students for teaching and learning to be effective. Lack of resource materials will hinder effective teaching and learning which lead to poor academic achievement of student in Geography.

Akinwumiju and Orimoloye (2014) pointed out that material resources from Nursery to University require basic structure for their effective operations. These include laboratories, weather station, geographical map or atlas, library and thermometer etc. Within the basic structure, it was suggested that there should be fixtures and fittings to make them usable. These resources are not only to be adequate in number but should be in good condition for the school to function properly. Therefore, quality education cannot be achieved without availability and proper utilization of educational resources which play an important role in the achievement of educational goals and objectives. This phenomenon is bound to affect secondary students' academic performances in Jos North Local Government Area Plateau State.

The chief examiners' report in West African Examination Council(WAEC) for the year 2011-2015 on students' performance in Geography in Nigeria shows in 2011 59.15% pass, in 2012 51.91% passed, in 2013 39.7% passed, in 2014 49.2% passed and in 2015 41.2% passed. The average of these students' performance scores is 48.2. This weak performance question the effectiveness of teaching Geography in our secondary schools, particularly in practicals including field trip.

In the evaluation of students' academic achievement in Geography as a school subject, the students undertake various works within and outside the school. Within the school, such exercises include assignments, fieldwork supervised by the Geography teacher, teacher-made tests, terminal examinations, etc. The results from the above exercises are graded and reported by the subject teacher as part of the progress report of the students. The performance of students in Geography in both WAEC and Nigerian Examination Council(NECO) in Plateau State from the year 2019-2021 shows that in WAEC 2019, 77.74 % passed, WAEC 2020, 91.89 passed, while in WAEC 2021, 70.38 % passed so the average performance of Geography students in WAEC from 2019-2021 is 80.00% . In NECO 2019, 97.94% do passed; NECO 2020, 95.59 passed while in NECO 2021, 97.64% passed. The average performance of Geography students in NECO from 2019-2021 is 97.06%.

Statement of Problem

Based on the above record of students' performance in WAEC and NECO in Jos North Plateau State, the average performance of students in WAEC from 2019 – 2021 is lower than their performance in NECO during the same period of time. The difference between the two of 17.06% is notable. This study intends to find out the students' academic achievement in Geography in selected secondary schools in Jos North Local Government Area of Plateau State, by looking at their past Geography WAEC results in those selected secondary schools in Jos North, and finding out the availability of resource materials used for teaching and learning Geography according to school type.

Based on the above statistical figures, the researcher observes that the performance at secondary school students in Geography Jos North Local Government Area of Plateau State in

Wana C.Mamza, and Prof. Saurayi I. Dadughun

WAEC, average of 80% is much higher than the national average of 48.2%, the gap of four years between the periods that these two sets of data represent, notwithstanding. The notable difference of 17.6% in the performance averages of WAEC and NECO in Geography in secondary schools in Jos North Local Government Area of Plateau State also raises some concern.

This apparently high performance of secondary schools in high performance of secondary schools in geography in Jos North Local Government Area of Plateau State in WAEC and NECO is a welcome development is indeed it is substantiated. Finding out the availability, adequacy and utilization of resource materials for effective teaching and learning Geography in the said schools will enable one to determine whether they do actually merit those high scores. Certainly, insufficient and lack of utilization of resource materials will lead to low performance in Geography.

School type and the availability of resource materials in Geography can have a significant impact on the learning outcomes of students. The availability and quality of learning materials in Geography are crucial factors in ensuring that students learn according to their individual needs and abilities. School types such as public schools and private schools have differences in amount and quality of resource materials available to them. Private schools, for instance, may have more advanced technology and resources that allow for greater flexibility and innovation in classroom instruction. Public schools, on the other hand, may have access to more government funding, which could lead to more and better resources, such as textbooks, field trips, etc. Resource materials such as graphic, weather instrument, audio visual, printed materials, local materials and among others are essential to students' academic success. Schools with limited resources and out-dated materials struggle to provide effective instruction. As technology continues to advance, schools must work to keep up with the latest resources and provide students with the necessary skills and tools to succeed. It is essential for schools to provide quality and up-to-date resources to ensure that all students have the opportunity to learn effectively and achieve their full potential in Geography.

What are the available resource materials are they adequate and to what level are the available material resources being utilized in teaching and learning Geography in secondary schools in Jos- North Plateau State? This study was carried out to evaluate Geography resource materials and students' academic achievement in Geography in secondary schools in Jos- North Plateau State.

Methods

Descriptive survey research design was adopted in the study. The population of the study consisted of 22 public and 229 private secondary schools teachers and students in Jos North Plateau State. A sample of 275 respondents which includes twenty five (25) geography teachers and two hundred and fifty (250) Geography students was used. A proportional stratified sampling technique was used. The two public and twenty-three private secondary schools were randomly selected from the total secondary schools population in Jos North Plateau State. The researcher used lottery method to select 2 public schools from 22 public secondary schools and 23 private from 229 private secondary schools. The study used proportionate stratified sampling techniques for the two school type. The research instrument used in this study to collect data is the structured teacher and student checklist, questionnaire, and students' academic records. The teacher checklist tagged Availability of Geography Resource Materials (AGRM). The schools students' records which is the Geography WAEC results of the sampled schools for previous three years (2019, 2020 and 2021) were used to examine the academic achievement of the students in Geography in secondary schools. The students' academic record was the sampled schools past Geography WAEC results for three years (2019, 2020 and 2021). The Geography WAEC results

Resource Materials And Student's Academic achievement In Geography in Secondary Schools In Jos North Plateau State records involved the total number of students that sat for Geography that year, those who had As, Bs, Cs, Ds, Es and Fs.

The Likert rating scale. Available A = 1, Not Available = 0 for available resources. Data were analysed using percentage and t-test.

RESULTS

Research Questions One

What are the available resource materials for teaching and learning Geography according to school type in Jos North L.G.A of Plateau State 2019-2022?

Table 1: Frequency Counts and Percentages of Respondents Ratings on the Available Resource Materials for Teaching and Learning Geography According to School Type in Jos North L.G.A of Plateau State

| S/N | Resource material | Private Schools | | | Public Schools | | |
|-----|------------------------------|-----------------|------|---------------|----------------|------|---------------|
| | | Available | % | Not available | Available | % | Not available |
| 1 | Stephenson screen | 7 | 2.8 | 246 | 0 | 0 | 22 |
| 2 | Barometer | 47 | 18.6 | 206 | 5 | 22.7 | 17 |
| 3 | Thermometer | 154 | 60.8 | 99 | 14 | 63.6 | 8 |
| 4 | Barograph | 43 | 16.9 | 210 | 4 | 18.2 | 18 |
| 5 | Wet and dry bulb thermometer | 55 | 21.7 | 198 | 6 | 27.3 | 16 |
| 6 | Anemometer | 58 | 22.9 | 195 | 6 | 27.3 | 16 |
| 7 | Geography lab | 43 | 16.9 | 210 | 1 | 4.5 | 21 |
| 8 | Wind vane | 66 | 26.1 | 187 | 4 | 18.2 | 18 |
| 9 | Sunshine recorder | 40 | 15.8 | 213 | 5 | 22.7 | 17 |
| 10 | Rain gauge | 62 | 24.5 | 191 | 6 | 27.3 | 16 |
| 11 | Chart of weather symbols | 154 | 60.9 | 99 | 7 | 31.8 | 15 |
| 12 | Maps | 223 | 88.1 | 30 | 15 | 68.2 | 7 |
| 13 | Geographical textbooks | 223 | 88.1 | 30 | 19 | 86.4 | 3 |
| 14 | Atlas | 135 | 53.4 | 118 | 9 | 40.9 | 13 |
| 15 | Geographical charts | 150 | 59.3 | 103 | 11 | 50.0 | 11 |
| 16 | Projector | 69 | 27.3 | 184 | 5 | 22.7 | 17 |
| 17 | Hygrometer | 55 | 21.7 | 198 | 4 | 18.2 | 18 |
| 18 | Rock cycle | 139 | 54.9 | 114 | 12 | 54.5 | 10 |
| 19 | Weather station | 22 | 8.7 | 231 | 0 | 0 | 22 |
| 20 | Library | 146 | 57.7 | 107 | 14 | 63.6 | 8 |

Table 1 Present the scores of availability of geography resource materials in private secondary schools in Jos North Local Government Area. From the results, eight resource materials which are thermometer, chart of weather symbols, maps, geographical textbooks, atlas, geographical charts, rock cycle, and library are rated 50% and above are available in private secondary schools in Jos North Local Government Area. The resource materials that are not available are Stephenson screen, barometer, barograph, wet and dry bulb thermometer; anemometer, Geography lab, wind vane, sunshine recorder, rain gauge, projection, hygrometer, and weather station are not available. This implies that most of the Geography resource materials in both public and private secondary schools in Jos North Local Government Area are not readily available.

Table 1 also presents the result of analysis on available Geography resource materials in public secondary schools in Jos North Local Government Area. From the results, seven resource materials which are thermometer, maps, geographical charts, rock cycle, and library are rated 50% above available in public secondary schools in Jos North Local Government Area. The not available are Stephenson screen and weather station are 0% not available. Also barometer, barograph, wet and dry bulb thermometer, anemometer, Geography lab, wind vane, sunshine recorder, rain gauge, chart of weather symbols, atlas, projection, and hygrometer not available in public secondary schools in Jos North Local Government Area.

Research Question Two

What is the academic achievement of students in Geography according to school type in Jos North L.G.A of Plateau State?

Table 2: Academic Achievement of Students in Geography (WAEC 2019, 2020, 2021) According to School Type in Jos North L.G.A of Plateau State

| Grade | Private Schools (23) | | | | | | Public Schools (2) | | | | | |
|--------------------------|----------------------|------------|------------|------------|------------|------------|--------------------|------------|------------|------------|------------|------------|
| | 2019` | | 2020 | | 2021 | | 2019` | | 2020 | | 2021 | |
| | No | % | No | % | No | % | No | % | No | % | No | % |
| A | 124 | 15.0 | 136 | 15.0 | 112 | 13.0 | 3 | 3.0 | 7 | 6.0 | 10 | 9.0 |
| B | 282 | 29.0 | 250 | 21.0 | 264 | 28.0 | 19 | 18.0 | 15 | 13.0 | 19 | 18.0 |
| C | 220 | 27.0 | 212 | 23.0 | 228 | 24.0 | 45 | 44.0 | 39 | 34.0 | 29 | 27.0 |
| D | 86 | 15.0 | 198 | 22.0 | 104 | 14.0 | 22 | 21.0 | 31 | 27.0 | 28 | 26.0 |
| E | 80 | 10.0 | 72 | 12.0 | 96 | 11.0 | 10 | 10.0 | 14 | 12.0 | 12 | 11.0 |
| F | 32 | 4.0 | 44 | 7.0 | 60 | 9.0 | 4 | 4.0 | 8 | 7.0 | 9 | 8.0 |
| Total of Students | 824 | 100 | 912 | 100 | 864 | 100 | 103 | 100 | 114 | 100 | 108 | 100 |

Analysis of the result under Table 2, shows that in year 2019, out of the total number of students that sat for Geography WAEC in the selected private secondary schools in Jos North L.G.A; 15.0% got an A, 29.0% got a B, 27.0% got a C, 15.0% got a D, 10.0% got E with only a few (4.0%) had an F. In 2020, out of the total number of students that sat for Geography WAEC in the selected private secondary schools in Jos North L.G.A; 15.0% got an A, 21.0% got a B, 23.0% got a C, 22.0% got a D, 12.0% got E with only a few (7.0%) had an F. In 2021, out of the total number of students that sat for Geography WAEC in the selected private secondary schools in Jos North L.G.A; 13.0% got an A, 28.0% got a B, 24.0% got a C, 14.0% got a D, 11.0% and E with only a few (9.0%) had an F. This shows that in the year 2019, 2020 and 2021, majority of the students that sat for Geography WAEC in the selected private secondary schools in Jos North L.G.A had a B or at least a C.

Analysis of the result under Table 2 alsoshows that in year 2019, out of the total number of students that sat for Geography WAEC in the selected public secondary schools in Jos North L.G.A; 3.0% got an A, 18.0% got a B, 44.0% got a C, 21.0% got a D, 10.0% got E with only a few

(4.0%) had an F. In 2020, out of the total number of students that sat for Geography WAEC in the selected public secondary schools in Jos North L.G.A; 6.0% got an A, 13.0% got a B, 34.0% got a C, 27.0% got a D, 12.0% got E with only a few (7.0%) had an F. In 2021, out of the total number of students that sat for Geography WAEC in the selected public secondary schools in Jos North L.G.A; 9.0% got an A, 18.0% got a B, 27.0% got a C, 26.0% got a D, 11.0% and E with only a few (8.0%) had an F. This shows that in the year 2019, 2020 and 2021, majority of the students that sat for Geography WAEC in the selected public secondary schools in Jos North L.G.A had a C or at least a D.

This shows that the Geography students in private secondary schools in Jos North achieved better in Geography WAEC than the Geography students in public secondary schools in Jos North L.G.A.

Discussion of Findings

The findings of the results were discussed under different sub headings and they include:

The result of the study found out that out of 20 resource materials for teaching and learning Geography in secondary schools in Jos North L.G.A of Plateau State, only eight were found to be available in private secondary schools in Jos North L.G.A while seven are available in public secondary schools in Jos North L.G.A. The resources are thermometer (60.8%), chart of weather symbols (60.9%), maps (88.1%), geographical charts (59.3%), geographical textbooks (88.1%), atlas (53.4%) rock cycle (54.9%) and library (57.7%) are shown to be available for the teaching and learning of Geography in both the private and public schools except for atlas which is found to be available in private secondary schools only. Other resource materials that are rated below 50.0% like Stephenson screen, barometer, barograph, wet and dry bulb thermometer, anemometer, Geography lab, wind vane, sunshine recorder, rain gauge, projection, hygrometer, rock cycle and weather station are found to be unavailable in both the private and public secondary schools in Jos North L.G.A.

This finding is in line with Tolulope and Babatunde (2011) that instructional resources available in teaching Geography are projector (10%), wet and dry thermometer (26.67%), Geographical Charts (33.33%), chart of weather symbol (33.33%), Globe (73.33%), Topographical map (83.33%), Atlas (93.33%), and Geography textbooks (100%) while Stephenson screen, cup anemometer, tube anemometer, rain gauge, sunshine recorder, wind vane, satellites images, geographical library, geographical garden were not available in secondary schools in Osun state. From the available instructional resources, results showed that Chart of Weather Symbols (60%), Globe (72.72%), Geography Textbooks (76.67%), Topographical maps (80%) and Wall maps (100%) were the instructional resources adequately available. The result obtained revealed that resources are not readily available in secondary schools in Osun State. Analysis of hypothesis one also confirmed that there is no significant mean difference in the availability of material resources for teaching and learning of Geography according to school type in Jos North L.G.A of Plateau State.

Analysis of the result students' academic achievement in WAEC shows that in year 2019, out of the total number of students that sat for Geography WAEC in the selected private secondary schools in Jos North L.G.A; 15.0% got an A, 29.0% got a B, 27.0% got a C, 15.0% got a D, 10.0% got E with only a few (4.0%) had an F. In 2020, out of the total number of students that sat for Geography WAEC in the selected private secondary schools in Jos North L.G.A; 15.0% got an A, 21.0% got a B, 23.0% got a C, 22.0% got a D, 12.0% got E with only a few (7.0%) had an F. In 2021, out of the total number of students that sat for Geography WAEC in the selected private secondary schools in Jos North L.G.A; 13.0% got an A, 28.0% got a B, 24.0% got a C,

Wana C.Mamza, and Prof. Saurayi I. Dadughun

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Conclusion

Resource materials are very vital for effective teaching and learning of Geography in secondary schools. In Jos North L.G.A of Plateau State, most of these resource materials are inadequate and limited; also their utilization by teachers is low in both private and public secondary schools. Failure of secondary school teachers in the public and private schools to deliver their lessons effectively in the classroom has negative consequences on both school development and students' academic achievement. This situation could also present a lot of difficulty in providing conducive learning environment for attainment of educational goals in the secondary schools. The study therefore submits that resource materials are not highly available in both public and private secondary schools in Jos North L.G.A of Plateau State, given that resource materials are not adequate in both the private schools and public schools. The finding does not support the high performance score average in geography awarded to secondary schools in the study area by WAEC and NECO.

Recommendations

Educational Policy makers and Curriculum developers should ensure that they identify resource materials needed and integrated them into the Curriculum Programme of Secondary schools. This will help teachers to acquire and develop knowledge on the use of these resources. The Plateau State Post Primary School Service Commission (PPSSC) should promote effective use of resource materials in secondary schools through making provision for the needed resource materials. They should liaise with the State government and non-governmental agencies in order to provide schools with the required resource materials like Stephenson screen, barometer, barograph, wet and dry bulb thermometer, anemometer, Geography lab, wind vane, sunshine recorder, rain gauge, projector, hygrometer, rock cycle and weather station, to aid teaching of Geography

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