37Rima International Journal of Education (RIJE), Vol. 4 (No. 3): June 2025; Page: 26-37 ISSN: 2756 - 6749

Resource integration for Enhancing Teaching and Learning Geography on Secondary School Students' Academic Performance in Kaduna State

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Abstract

The objectives of the study was to evaluate the integration of resources in teaching and learning geography in Secondary Schools of Kaduna State, and determine the level of Student Engagement and Learning Outcome in geography in Secondary schools in Kaduna State, A reconnaissance survey of the study area will be used in sourcing for data from the study area. The study comprised of 88 randomly selected Geography teachers from 55 purposively selected schools across 11 systematically selected Local Government Areas in the State. Descriptive statistics namely; frequencies, percentages, mean and standard deviation were used to analyze data. The findings of the study revealed that the major instructional resource available for the teaching geography in the Secondary Schools in the State is textbooks (mean score of 3.43). The study also revealed that most schools lack adequate geography resources, and the resource integration is limited with (67%) respondents attested to that. The study concludes that resource integration in geography leaning is inadequate and recommends increasing resource availability, there should be frequent Staff development opportunities such as workshops and conferences and regular monitoring and evaluation of geography resource integration.

Keywords: Geography Resource Integration, Secondary Schools, Enhancing Students performance

Introduction

Geography education plays a vital role in shaping the understanding of students about their environment, spatial relationships and global perspectives. In secondary schools, geography learning is crucial for fostering critical thinking, problem-solving, and informed decision-making skills. However, the effectiveness of geography education largely depends on the availability and integration of relevant resources

For learning to take place effectively, it must be backed by a variety of learning materials. In this study, these learning materials or teaching aids are referred to as geographic instructional resources. Instructional Materials or

Teaching and Learning Materials are resources that a teacher may use in teaching and learning situations to help achieve desired learning objectives and to facilitate the teaching and learning process. Broadly, the term refers to a spectrum of classroom educational materials teachers use to achieve specific learning objectives. (Open Learn, 2022).

According to Kadzera (206), Instructional materials bring life to learning by stimulating students to learn. The use of instructional materials in the classroom has the potential to help the teachers explain new concepts clearly, resulting in better student understanding of the concepts being taught. However, they are not ends in themselves but they are means to an end. It is held that good teaching resources can never replace the teacher but the teacher uses them to achieve their teaching and learning objectives (Kadzera, 2006). Some of the instructional materials necessary for effective teaching and learning of Geography include textbooks, video/audio and visual aids, printed and graphic materials, Maps, sketch maps, pictures, photographs, film stripes, tape recording, radio, films, diagrams, thermometer, barometers, wind vain, rain gauges, geography laboratory equipment, projectors, and computers (Ashaver & Mwuese, 2013). The importance of the use of these materials cannot be underscored. They are designed to make the learning process effective and efficient for both educators and students.

These instructional resources are important in students' learning as they attend to various learners' needs. They provide learners with skills of critical thinking, problem-solving creativity, memorization, and problem-solving, as well as stimulate learning in a fun and inclusive manner (Mugisha, 2020). Instructional resources are thought (Dhakal, 2017) to make the teaching process easier, especially teaching geography. Teachers should use diverse types of instructional materials for the teaching of geography to be effective. The disciplinary change in basic assumptions in Geography has made using instructional materials in teaching and learning the subject necessary. According to Mzinga and Onyango (2021), it helps learners to fully participate in the learning process as well as interact with their teachers and fellow students which is very important for the improvement of teaching and learning geography.

Similarly, Dhakal (2020), emphasized the importance of instructional resources and stressed that learning cannot be concrete or meaningful if instructional materials are absent and that teaching and learning can only be

effective if teachers teach students to visualize what they are taught or manipulate what they are taught in practical terms. The absence of instructional materials in our schools makes it difficult for teachers to teach especially science subjects effectively. It was further revealed that the use of instructional materials foster early specialization as the students begin to find an aspect of the subject taught with instructional materials interesting. For curriculum to be well implemented effectively teachers must select the instructional procedures and materials that will enable leaners internalize, retain and apply what has been learnt (Hilda and Bernard, 2015).

It is generally acknowledged that students' performance in ordinary-level geography examinations conducted by the West African Examination Council (WAEC) was poor over the year 2006-2018 (WAEC results statistics, 2018). This trend is not only disturbing but also very discouraging especially based on the persistent nature of the problem as reflected in WAEC Chief Examiners' reports from 2006 – 2018, (Eze, 2020). Studies by Anlimachie (2019), blame weak performance in Geography at WASSCE on the low level of practical and fieldwork, while linking the same to a shortage of ideal teachers, poorly stocked Geography resources rooms, instructional materials, and other school resources. The impact of these on students' learning, is the creation of a missing link between classroom learning experiences and real-world situations. Thus, inadequate preparation can be explained partly by inadequate ideal teacher supply, and shortage of an array of Geography teaching and learning resources. Harping on these same points, Rilwani, Akahomen, and Gbakeji 2014) identify inadequate teachers and a lack of requisite teaching facilities/aids as major factors that translate to poor teaching of Geography and students' increasing unwillingness to offer the subject.. Also, the Secondary School Curriculum has made geography an optional subject for both Science and Arts students. According to Eze, (2020) reports, students encounter problems in the areas of map reading, map interpretation, survey, and remote sensing, among others, which have been recurrent challenges for students. This persistent low performance of students in some aspects of Geography leaves one in doubt about the effectiveness and teacher's level of compliance with the implementation of the senior secondary school Geography curriculum. The low performance has been attributed to poor methods of instruction (Sharma, 2013), wide coverage of the subject (Ofodu, 2010), insufficient instructional materials (Abidoye & Oguniyi, 2012), and inadequate qualified teachers (Balogun, 2006). In essence, to achieve the objectives of teaching Geography in senior secondary schools, a variety of

methods and instructional materials should be employed. In light of the above, this study sets out to assess the extent to which instructional materials are available and being used in Secondary Schools in Kaduna State.

Research Objective

The main objective of this paper is to:

1. Evaluate the effectiveness of resource integration in enhancing geography learning in secondary in schools across Kaduna State.
2. Level of students' engagement and learning outcome in geography in secondary schools across Kaduna State

Research Methodology

A reconnaissance survey of the study area was carried out by the researcher to have an adequate insight of the study area. During the survey, the researchers held discussions with major stakeholders in the Secondary School sub-sector such as Quality Assurance Officers, Supervisors, and principals of selected schools. It was at this stage that the researchers were able to obtain the list of all Government secondary schools in the state.

The main research instrument here is the questionnaire which was administered in different schools across the study area. The questions were designed for the geography teachers. The questionnaire deals with the demography of the respondents, the integration of geographic resources into lessons and student's engagement and learning outcomes.

A list of Kaduna state government secondary schools was obtained at the headquarters of the Quality Assurance Unit of the Ministry of Education. Other relevant information was sourced from existing official statistics from both national and international publications, including books, journals, conference papers, theses, and the Internet.

The sample size consists of 88 geography teachers randomly selected from 55 schools across 11 Local Government Areas in Kaduna State. There are 23 Local Government Areas in the state which were arranged in alphabetical order and assigned numbers from 1-23. Only the LGAs on even numbers were selected, hence the 11 LGAs. Five schools were purposively selected from each LGA, totaling 55 schools. In each of the 55 schools, 2 Geography

teachers were to be randomly selected, however, some of the selected schools didn't have any geography teacher, while others had only 1 teacher which gives the total number of 88 respondents. The data collected was analyzed using percentages, mean, and standard deviation in the SPSS environment to determine the extent of utilization and integration of the geographical resources in teaching and learning of geography.

Results

This section deals with the results obtained from the data analyzed. It also discusses the outcome of the analysis.

Table 1: Available Geographic Resources in Sec. Schools

Resources	N	Minimum	Maximum	Mean	Std. Deviation
Maps	88	1.00	5.00	2.45	1.42
Globes	88	1.00	5.00	2.76	1.55
Computers	88	1.00	5.00	2.76	1.74
Internet	88	1.00	5.00	2.22	1.63
GIS	88	1.00	5.00	1.57	1.09
Textbooks	88	1.00	5.00	3.43	1.50
Fieldtrip	88	1.00	5.00	2.04	1.36
Abney Level	88	1.00	4.00	1.44	.75
Arrow	88	1.00	5.00	1.60	1.00
Compass	88	1.00	5.00	1.77	1.20
Projector	88	1.00	5.00	1.89	1.33
Tables	88	1.00	5.00	1.88	1.29
Rocks	88	1.00	5.00	2.45	1.58
Theodolite	88	1.00	5.00	1.81	1.30
Thread	88	1.00	5.00	2.73	1.62
Ranging Poles	88	1.00	5.00	1.70	1.23
Slides	88	1.00	5.00	1.45	.95
Flash Cards	88	1.00	5.00	1.77	1.27
Charts	88	1.00	5.00	2.79	1.59
Chain	88	1.00	5.00	1.95	1.49
Rulers	88	1.00	5.00	2.56	1.65
Microphone	88	1.00	5.00	1.75	1.29
TV	88	1.00	5.00	1.61	1.21
Weather Station	88	1.00	5.00	1.78	1.37
Garden	88	1.00	5.00	1.79	1.35

Field Work: 2023.

From table 1 above, the only resource with a mean value above 3.00 is textbooks (3.43), implying that the major instructional resource available for the teaching of geography in Secondary Schools in the State is textbooks. Other resources identified and classified as inadequate include maps, globes, charts, rocks, thread, and rulers. Most other resources required for teaching geography as a subject are not available for use in Secondary Schools.

Table 2: Integration of Geographical Resources

Responses	Frequency	Percent
Rarely	20	23
Occasionally	37	42
Often	22	25
Very often	9	10
Total	88	100

Field Work, 2023

Table 2 above presents the frequency of the incorporation of geographical resources into lessons by respondents. An overwhelming majority (42%) occasionally incorporate resources into their geography lessons; however, there is a very slim margin separating those who do it often (25%) from those who rarely incorporate resources into their lessons (23%). The last category (10%) is respondents who very often incorporate resources into their lessons.

Table 3: Effectiveness of resources alignment with curriculum

Responses	Frequency	Percent
Not effective	6	7
Somewhat effective	15	17
Effective	39	44
Highly effective	28	32
Total	88	100

Field Work, 2023.

Respondents' opinion was sought on the effectiveness of the alignment of geographic resources with the curriculum. The responses (table 5) were varied as very few (7%) opined that it is not effective, while the majority (44%) believed resources are effectively.

This section deals with student engagement and learning outcomes. It tries to find out if respondents have observed any difference in students' learning outcome when using geographical resources in their lessons.

Table 4: Student Engagement and Learning Outcome

Learning outcome	Frequency	Percent
Yes, a significant improvement	50	57
Yes, a moderate improvement	29	33
No noticeable difference	6	7
No, a moderate decline	3	3
Total	88	100

Field Work: 2023.

From the table, an overwhelming majority (57%) opined that there was a significant improvement in students' learning outcomes while those who observed a moderate improvement were 33% of the respondents. However, an insignificant group (3%) observed a moderate decline in students learning outcomes.

Teachers were asked to share specific examples or their observations regarding changes in students' learning outcomes when using geographical resources. Their observations were varied as presented in the table below.

Table 5: Observed changes in students' learning outcomes.

Observation	Frequency	Percent
Enhances students' learning	25	28
Encourages learning through participation	21	24
Connects classroom experiences with real-life situations	6	7
Arouses students' interest/Motivation	20	23
Better performance in WAEC/NECO	6	7
None	10	11
Total	88	100

Field Work: 2023.

The most observed learning outcome by teachers in Kaduna State is that it enhances students' learning (28%), as well as encouraging learning through participation (24%) and arousing students' interest (motivation) in the subject (23%). Other learning outcomes observed includes; connecting classroom experiences with real life situations and better performance in national examinations (7% respectively). There was also a group of teachers who could not observe any changes in learning outcome (11%). This result contrasts sharply with that of Mugisha (2020) who found out that improvement in students' grade/ performance is the major observed learning outcome in Rwanda.

Discussion of Findings

The study revealed several key insights into the availability, usage, and effectiveness of geographical instructional resources in public secondary schools in Kaduna State.

Availability of Geographic Resources

Table 1 shows that textbooks were the most readily available resource, with a mean score of 3.43. This suggests that while traditional resources like

textbooks are present, other critical instructional materials such as GIS tools (M = 1.57), theodolites (M = 1.81), and fieldwork instruments such as ranging poles (M = 1.70) and chains (M = 1.95) are significantly lacking. This finding aligns with prior studies that indicate educational institutions in sub-Saharan Africa often depend on textbooks as the primary, and sometimes sole, teaching resource (UNESCO, 2019).

The low availability of tools like Abney levels, compasses, and globes underscores a serious gap in the implementation of experiential and field-based geography learning, which is essential for building spatial thinking and analytical skills (NRC, 2006).

Integration of Resources in Teaching

As shown in Table 2, only 10% of teachers reported using geographical resources very often, while the majority (42%) admitted to occasional usage. This suggests that while some teachers make an effort to integrate resources, constraints such as lack of access, insufficient training, or time limitations may hinder frequent application. According to Adeyemi (2018), resource integration is more effective when supported by adequate infrastructure and continuous professional development.

Alignment with Curriculum

A large proportion of respondents (44%) affirmed that the resources currently in use are effectively aligned with the curriculum (Table 3). However, a significant number (17%) found them only somewhat effective, and 7% believed the alignment was not effective. This could reflect the discrepancy between curriculum expectations and the actual teaching conditions, a pattern observed in similar studies on curriculum-resource gaps in Nigeria (Ofoegbu & Nwadiani, 2020).

Impact on Student Engagement and Learning Outcomes

The findings from Table 4 indicate that the use of geographic resources has a positive impact on student learning. A majority of teachers (57%) observed a significant improvement in students' academic outcomes, while 33% noticed a moderate improvement. Only 3% perceived a decline. These results reinforce the importance of instructional materials in enhancing learning engagement and retention (Bruner, 1966).

Table 5 further reveals that teachers observed improvements such as enhanced student learning (28%), increased participation (24%), and aroused interest/motivation (23%). However, only 7% attributed these improvements to better performance in national exams (WAEC/NECO), which contrasts with Mugisha's (2020) findings in Rwanda, where examination performance was the primary observed benefit.

Comparative Perspective

While the findings from Kaduna State show some progress in the use of instructional materials, the extent and quality of available resources remain inadequate. Compared to contexts like Rwanda where ICT integration in geography education is prioritized (Mugisha, 2020), Kaduna State still lags in equipping schools with modern tools such as GIS and multimedia devices.

Conclusion

Geography is a discipline that examines the relationships between people and the earth, what people are doing because of these relationships, and what they can do. Geographic concepts should be taught using different instructional materials. These instructional materials are, however, either completely not available or grossly inadequate in most of the Public Secondary Schools in Kaduna State. To enhance geography education, schools need to prioritize resource allocation, provide teacher training and promote practical learning experiences.

Recommendations

Based on the findings of this study regarding the availability, integration, and effectiveness of geographical instructional resources in public secondary schools in Kaduna State, the following recommendations are proposed:

1. **Improvement in Resource Provision**

The State Ministry of Education and relevant stakeholders should prioritize the procurement and distribution of modern geography teaching resources such as GIS tools, theodolites, weather stations, compasses, and other essential fieldwork instruments. The current over-reliance on textbooks (mean = 3.43) should be supplemented with diverse, interactive materials that promote hands-on and spatial learning.

2. **Teacher Training and Capacity Building**

Professional development programs should be organized to train geography teachers on how to effectively use instructional resources, including digital tools and field equipment. Teachers' limited integration of resources—only 10% reported frequent use—suggests a need for training that bridges the gap between availability and utilization.

3. **Curriculum-Resource Alignment Audits**

Regular reviews should be conducted to ensure that instructional materials are aligned with curriculum goals. While 44% of respondents believe the resources are effective in supporting the curriculum, there is still room for improvement. Developing a resource guide tailored to the curriculum can enhance consistency in instructional delivery.

4. **Integration of ICT in Geography Education**

Given the low availability and usage of technological resources like computers and the internet (means = 2.76 and 2.22 respectively), integrating ICT in the teaching of geography should be a priority. This can include the use of virtual globes, satellite imagery, and GIS software, which are increasingly important in modern geographic analysis.

5. **Promoting Practical Learning through Fieldwork**

Schools should encourage field trips and outdoor learning, as these activities are known to enhance student engagement. The low mean scores for fieldtrip resources (2.04) and related tools highlight the need for logistical and financial support to facilitate field-based instruction.

6. **Monitoring and Evaluation**

Establishing a system for regular monitoring of how resources are used in classrooms can help identify gaps and best practices. This can be done through lesson observations, teacher self-reports, and student feedback mechanisms.

7. **Policy Advocacy**

Stakeholders in the education sector should advocate for education policies that recognize geography as a core subject requiring specialized resources.

Increased budgetary allocation for geography education could significantly address the deficiencies in resource availability and utilization.

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