

**THE EFFICACY OF INSTRUCTIONAL MATERIALS IN  
ENHANCING TEACHING AND LEARNING OF GEOGRAPHY IN  
SENIOR SECONDARY SCHOOLS IN NIGERIA**

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**Abstract**

This research investigates the efficacy of instructional materials in enhancing the teaching and learning of geography in senior secondary schools across Nigeria. Geography education plays a pivotal role in fostering students' understanding of spatial relationships, environmental dynamics, and global perspectives. Effective delivery of geography curriculum content relies significantly on the availability and utilisation of appropriate instructional materials. This study employs a mixed-methods approach, combining qualitative interviews with geography educators and quantitative surveys among senior secondary school students. The research examines various forms of instructional materials, such as visual aids, models, maps, and audio-visual tools, assessing their educational value and impact on student engagement and learning outcomes. Additionally, it identifies challenges, including teacher proficiency, resource availability, financial constraints, and maintenance issues, that affect the effective utilisation of instructional materials. Findings underscore the critical role of instructional materials in enhancing the quality of geography education, suggesting recommendations for improving resource accessibility, teacher training, and institutional support to optimise teaching and learning experiences in Nigerian schools. This study contributes valuable insights for educators, policymakers, and curriculum developers aiming to strengthen geography education through enhanced instructional practices and resource management strategies.

**Keywords:** efficacy, geography, instructional materials, teaching and learning

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## **1 Introduction**

Geography is a study that teaches students how to comprehend, master, and use the resources in their area to engage in a variety of economic activities, including forestry, agriculture, fisheries, lumbering, beekeeping, mining, and fishing (Onyango, 2019). Geography aids students in gaining factual knowledge about the world and its regions, with a focus on the variety of cultural and natural landscape features. It also aids students in developing a greater sense of global awareness and the ability to apply their knowledge of land use and planning principles, as well as a thorough understanding of the local, regional, and global economic landscapes. Geography aids students in understanding how people and the environment interact, how people affect the environment, and how the environment affects people. The efficient use of instructional resources in the teaching and learning of the topic should be a major issue in order to effectively fulfil these objectives of learning geography. Equipment designed to facilitate better teaching and more thorough learning is referred to as an instructional resource. These are the resources that can help with efficient instruction and learning. Instructional materials range from simple, improvised devices to highly complex and sophisticated machines specifically designed to help both teachers and students cope with specific needs and situations. Teachers use instructional materials as important learning resources to ensure that teaching and learning go off without a hitch.

According to Brigman and Campbell (2003), school facilities are meant to improve education, yet their insufficiency can negatively impact teaching and learning. Proper and effective use of instructional materials enhances learning and retention, making teaching more relevant. Reiser (2001) defined instructional media as the physical mechanism of delivering instruction to learners. Instructional media are several methods for presenting information to learners. In the 1920s and 1930s, teachers were the main source of teaching for students. The first St. Louis School Museum opened in 1905. School museums provide extra instructional tools for instructors to employ in teaching various themes (Reiser, 2001). Increasing interest in visual media and instructive films sparked the visual instruction movement. The first inventory of educational films was created in 1910 for classroom

usage. In the 1920s and 1930s, innovation in instructional media led to the audio-visual instruction movement. In 1923, the Association for Educational Communications and Technology was established.

Instructional television grew rapidly in the 1950s. The Federal Communications Commission allocated 242 channels for education in 1952 (Reiser, 2001). Unfortunately, some perceive the instructional quality of several programmes as mediocre. By the mid-1960s, instructional television was abandoned due to instructor reluctance, installation and maintenance costs, and mediocre programming. In the early 1970s, instructional media had yet to significantly alter educational methods. Researchers created computer-assisted instruction (CAI) and the first public school CAI program. However, widespread interest in computers as a teaching tool did not emerge until the 1980s.

The instructional technology sector has grown and altered since then. The field is constantly developing with new technologies. Technological advancements have transformed instructional technology usage. Modern instructional advancements include internet use, distant education, learner-centred environments, web 2.0 technologies, virtual environments (e.g., Second Life), wikis, and blogs.

### **1.1 Purpose of the Paper**

1. To examine the various forms of instructional materials in the teaching and learning of geography in secondary schools.
2. To assess the educational values and advantages of instructional materials in the teaching and learning of geography in secondary schools.
3. To identify the problems facing the utilisation of instructional materials in the teaching and learning of geography in secondary schools.

## **2 Forms of Instructional Materials**

### **1. Visual Aids**

Visual aids are teaching tools that use images. Visual aids are materials that can be seen with the eyes. Visual aids, such as textbooks, chalkboards, and projectors, are crucial for teachers to use in their daily teaching and learning processes.

## **2. Ground substance**

The pupil can see and touch the ground substance. Students enhance their senses and cognitive abilities through touching and watching stuff, enhancing their ability to understand and draw judgments. In the classroom, geography teachers can employ mineral resources such as rocks and soil samples as genuine things. When teaching about rock types, examples like granite, limestone, and marble can be used to illustrate igneous, sedimentary, and metamorphic rocks. This enhances learning by making it more concrete, realistic, and practical, resulting in lasting retention.

## **3. Model**

When a drug is unavailable or too large to bring into the classroom, teachers create a sample or model for pupils to understand. Models depict the dimensions of items in three dimensions: length, width, and height. Models of physical or relief characteristics are highly effective in teaching geography. The use of models makes lessons more engaging and practical, allowing students to envision, feel, and observe these aspects in real life.

## **4. Image**

Students are deeply affected by pictures. Teachers convey stories, science, and other subjects in linked graphics to engage pupils and explain concepts. Teaching with graphics can be simply displayed in the classroom and remembered by students for a long time.

## **5. Map**

Maps are commonly used to teach pupils about historical events and geographical features. When utilising the map, teachers should write important information such as names, titles, instructions, and signs. Different sorts of maps exist, including atlases, topographical maps, aerial pictures, and others. The introduction of Google Maps is a result of technological advancements. This is a game-changer for teachers. Google Maps offers numerous opportunities, but few teachers take advantage of them. One can create tours, estimate distances, compare directions, and view various maps. The potential is immense. The geography instructor should choose the most appropriate method based on the learners' age and learning topic. For teaching map reading and interpretation, topographical maps are a suitable option.

## **6. Graph**

A teacher only uses graphs to show rising or declining patterns. A graph is utilised in various fields, including geography, history, mathematics, science, and climate explanation. Population features are also shown through graphs. Most typically, graphs are used in teaching mathematics and science subjects.

## **7. Bulletin board**

Students use bulletin boards to show images, figures, articles, and information related to the country's political, economic, and social issues. Student knowledge is regularly increased through bulletin boards.

## **8. Museum**

The museum is a valuable educational tool that centralises objects, making text more engaging for students. The museum collects useful artefacts for geography, history, math, and science.

## **9. Projector**

The most often utilised instrument in modern schooling is a projector. Projectors make learning easier and more fun. Projectors enhance students' enjoyment, recall, observational skills, curiosity, and inquisitiveness. Sample projectors include overhead, slide, opaque, and the latest computer power point.

## **10. Slides and Films**

Projectors employ slides and film as instructional aids. Picture or film slides can be exhibited sequentially on the projector to enhance student learning.

## **11. Globe**

The globe helps youngsters understand the limits of continents, oceans, rivers, and mountains. The globe is commonly used in geography to teach students about the earth's shape, hemispheres, latitude and longitude lines, land and water distribution, continents, locations, rotation, and revolution.

## **12. Audio Aids**

This teaching aid improves students' listening and communication. Every classroom has auditory learners who can benefit from audio assistance. Audio aids, such as gramophones, radios, phones, teleconferencing, and tape recorders, help students strengthen their mental and hearing abilities through

listening to content.

### **13. Radio**

Children learn about current events on radio. Teaching programmes on the radio enhance students' learning, listening, comprehending, and memory skills across various disciplines and classes.

### **14. Tape Recorder**

Tape recorders are popular in education. Recording speeches, poetry, stories, and music from notable artists can help kids learn about and enjoy great leaders and writers. This tool corrects faults and thoughts connected to pupils' speech pace.

### **15. Audio-Visual Aids**

Technology has improved the student experience by adding audio-visual educational aids.

### **16. Films**

Cinema has various educational benefits. It provides more valuable knowledge than other media, as kids can learn effectively through watching and listening. Showing movies, documentaries, and films can help children learn about many countries, regions, and events.

### **17. Television**

Television offers the same benefits as cinema, but with a broader scope. Modern television transmits instructional and entertainment programmes to enhance learners' knowledge. Universities like India Gandhi National Open University (IGNOU) and the University Grant Commission (UGC) employ satellites to broadcast educational programmes for students to learn.

### **18. Computer**

The modern schooling system relies heavily on technology. With the aid of electronic devices, education has gained a valuable learning opportunity. Computers are used in several aspects of life, not just schooling.

### **19. Meteorological or Climatological Materials**

Common meteorological devices used by geographers include rain gauges, thermometers, wind vanes, anemometers, barometers, and hygrometers for measuring rainfall, temperature, wind direction, wind speed, pressure, and humidity.

### **20. Charts**

A chart combines visual elements with text or numbers to provide a

concise overview. The visualisation shows non-numerical linkages and processes. Types of charts include:

(i) Flow chart: Shows organisational elements and functional linkages. For example, calculating local time.

(ii) Tabulation chart: Tabulation charts provide data in tabular form. For instance, landforms can be displayed in a tabular fashion.

(iii) Time chart: The time chart provides a chronological framework for recording events and developments. Developing time sense among students helps them understand and picture time and its relationships. Examples include the discovery of new lands.

(iv) Picture charts: These charts communicate information using graphs, symbols, and drawings.

## **2.1 Educational Values of Instructional Materials in Teaching and Learning of Geography**

As an educator, your primary duty is to facilitate the acquisition, advancement, and cognitive maturation of young learners. It is crucial during their developmental period for individuals to acquire the necessary skills and attributes that will enable them to effectively contribute to society and fulfil their roles as productive members of the community in the future. The instruction you provide will have a significant impact on the development of their own characteristics. In addition to the aforementioned element, it is equally important to consider the acquisition of knowledge and the development of essential life skills among pupils. The utilisation of instructional resources is crucial as they serve to mitigate the risk of excessive focus on recitation and rote learning, which may otherwise dominate the instructional process. Resource materials facilitate hands-on learning experiences that enable learners to cultivate skills, acquire conceptual understanding, and engage in many modes of work.

The significance of instructional materials in the context of teaching and learning geography should not be overlooked. Numerous scholarly works have been dedicated to elucidating the essential role that materials play in the carrying out of curriculum. Instructional materials enhance the educational experience by fostering engagement, practicality, realism, and appeal. Furthermore, they facilitate the active and effective participation of

both teachers and students during lesson sessions. They provide opportunities for the acquisition of skills and information, as well as the development of self-confidence and self-actualization. According to Ibeneme (2000), the use of teaching aids is crucial in facilitating practical and demonstrative learning experiences within the classroom setting for both students and teachers. According to Ikerionwu (2000), instructional materials are tools that aid teachers in delivering lessons to learners in a coherent and organised manner. According to Fadeyiye (2005), instructional materials are visual and audio-visual aids that teachers use to enhance the quality of teaching and learning activities. These materials can be either tangible or intangible in nature. According to Agina-Obu (2005), instructional materials of various types engage the sensory organs during the process of teaching and learning. Isola (2010) provided a definition of instructional materials as things or gadgets that aid teachers in presenting their courses in a logical and sequential manner to learners. Oluwagbohunmi and Abdu-Raheem (2014) acknowledged the use of instructional resources by teachers as a means to facilitate explanations and enhance students' comprehension of subject matter during the teaching and learning process. According to Abdu-Raheem (2011), the lack of access to and insufficiency of instructional resources are significant factors contributing to the inefficiency of the educational system and the subpar academic performance of students within schools. Abolade (2009) asserted that instructional materials have several advantages. Firstly, they are cost-effective to develop. Secondly, they facilitate teaching to a large number of students simultaneously. Additionally, using geographic instructional materials promotes attentive engagement among geography students and stimulates their interest in the subject matter. According to Isola (2010), instructional materials can be defined as things or technology that aid teachers in delivering their teachings in a logical and sequential manner to learners. Abdu-Raheem and Oluwagbohunmi (2015) acknowledged the utilisation of instructional resources by educators as a means to facilitate explanations and enhance students' comprehension of subject matter during the teaching and learning process.

According to Kochhar (2012), instructional materials hold considerable importance as instruments for both learning and teaching. The individual proposed that teachers should seek out supplementary instructional materials



to complement the content provided in textbooks. This approach aims to expand upon concepts and stimulate students' interest in the subject matter. According to the findings of Afolabi and Adeleke (2010), the use of the lecture technique can be attributed to several variables, including the non-availability, inadequacy, and non-utilisation of learning resources. These difficulties are often a consequence of teachers' limited competence in the subject matter. It is suggested that various stakeholders, including students, teachers, parents, the Parents/Teacher Association, the government, and benefactors, should participate in the enhancement of instructional resources for educational purposes in schools. Hence, Ogbondah (2008) espoused the importance of teachers' ingenuity and urged them to proactively seek out instructional materials from local sources as a means of supplementing or substituting standard resources. According to Oso (2011), it is also acknowledged that teachers can effectively utilise their manipulative talents by employing improvisation techniques in order to attain their class objectives to a satisfactory degree. Jekayinfa (2012) further emphasised the significance of instructional materials in facilitating concrete and authentic learning experiences. These materials serve as a means of substitution, enabling students to actively engage in the production of educational resources. Furthermore, they offer economic advantages and promote a more teacher-student resource-oriented approach. According to Abdu-Raheem (2014), the utilisation of locally produced teaching aids has the potential to enhance the quality of graduates produced by educational institutions and increase the overall grade of education. Abdu-Raheem and Oluwagbohunmi (2015) further supported the notion that competent and resourceful educators in Nigerian educational institutions should employ improvisation techniques to develop and utilise instructional materials that enhance academic excellence.

## **2.2 Advantages of Instructional Materials**

Utilising instructional tools in the teaching of geography confers greater advantages compared to conventional teaching methods. The conventional method of using a chalkboard or whiteboard for instruction can quickly become tedious for students over an extended period of time. The act of enduring lengthy lectures from educators on diverse subjects on a daily basis

might get monotonous. Recent research has indicated that students in contemporary times tend to possess comparatively shorter attention spans. However, instructional materials are used in educational settings due to the several benefits they offer:

1. The incorporation of diverse instructional materials serves to alleviate the tedium within the classroom setting, hence presenting content that effectively captures students' attention and engenders active engagement.
2. Educational stimuli elicit curiosity and foster a desire for knowledge acquisition in children.
3. Interactive learning tools have the ability to actively engage students in a manner that is both enjoyable and comprehensible to them.
4. The utilisation of vibrant colours and unconventional background music (in the context of video material) enhances the visual and auditory appeal of the subjects, rendering them captivating to observe and engage with.
5. In addition, quizzes, charts, and presentations are utilised to fulfil their intended purpose within the context of higher grades. Once more, these aforementioned methods represent distinctive and captivating approaches to disseminating knowledge and delivering information, in contrast to the conventional employment of a whiteboard. When educators utilise instructional resources as teaching aids, they effectively enhance the overall quality and increase the level of engagement in their instructional practices. There are multiple aspects that attract the attention of students, appealing to their youthful cognitive faculties. The aforementioned factors encompass the aesthetic appeal of vibrant posters, the pleasure derived from engaging with audiovisual materials, and the cognitive stimulation experienced through collaborative participation in quizzes and games. These factors contribute to enhancing the enjoyment, efficacy, and overall reduction of monotony and fatigue in the learning process.

## **2.3 Problems with Instructional Materials Utilisation**

### **1. Teacher's Professional Knowledge and Technical know-how**

Given the relatively recent emergence of educational communication and technology as a significant area of focus in the field of education, it may be considered a somewhat specialised domain. In order to comprehend the potential impact of this field on instructional delivery, it is necessary to possess a comprehensive understanding of the operational functionality of the resource kits. The effectiveness of teaching aids or instructional materials is significantly influenced by the teacher's knowledge. This is due to the teacher's need to comprehend the sequential presentation of these instructional tools in order to align them with the learners' interests and the appropriateness of the instructional tasks.

### **2. Environmental Factor**

One aspect of the application process for teaching aids or instructional materials is identifying the target demographic for whom the resources are intended, as well as determining the appropriate location or environment in which the learning should occur.

### **3. Time**

The concept of time is a fundamental aspect of human existence and is widely studied in various academic disciplines. The issue of time poses a significant obstacle to the efficient utilisation of instructional delivery in the classroom. Often, the allocated time for a particular subject on the timetable may prove insufficient for the teacher to effectively present the content and make optimal use of instructional materials. Consequently, this limitation hampers the comprehensive delivery of the educational material.

### **4. Finance**

Finance appears to be the primary obstacle preventing educational institutions from obtaining the necessary instructional equipment and materials. In accordance with this perspective, both students and teachers may be deprived of the opportunity to acquire and use novel methodologies

within their respective domains. There exist advanced teaching aids and instructional materials, such as computer-aided programmes, that have the potential to enhance learning by making it more efficient. However, the limited availability of financial resources has hindered the importation and use of these tools in educational institutions.

### **5. Maintenance Culture**

The concept of maintenance refers to the activities and processes involved in preserving and sustaining the functionality, reliability, and performance of a system. The mishandling of educational materials by instructors and school authorities negatively impacts the effectiveness of instructional delivery. The lack of a resource room in schools has a significant impact on the storage and accessibility of both locally produced and commercially acquired instructional aids, consequently restricting their availability when required.

### **6. Unavailability of Teaching Aids**

One issue that hinders effective instruction is the lack of teaching aids. The deficiency of instructional resources in educational institutions is deemed inappropriate. A shortage of both printed and audio-visual resources was observed. Insufficient quantities and inadequate quality of instructional materials were prevalent in the majority of cases, encompassing both printed and audio-visual formats. The limited number of institutions that indicated the availability of these resources were found to be in substandard conditions.

### **Solution to the Problems**

(i) The conduct of workshops should focus on the utilisation of instructional resources. Geography educators should receive comprehensive training and ongoing professional development in order to acquire the necessary skills and techniques for effectively incorporating instructional materials into the teaching and learning process. This approach is expected to facilitate the establishment of long-term retention of knowledge in the students.

(ii) The allocation of financial resources by educational institutions and government entities, if needed, is essential for geography teachers to acquire appropriate instructional materials. These funds should be made accessible to teachers through specific education sectors authorised by the school authorities and government.

(iii) The school authorities should engage in consistent supervision of the educational resources at their disposal. It is crucial to ensure sufficient monitoring of these materials in order to prevent any instances of mismanagement or mishandling.

(iv) The geography teacher is expected to locally improvise and use accessible and suitable instructional materials in order to enhance the effectiveness of teaching and learning.

(v) The school authorities are responsible for ensuring the sufficient provision of instructional materials necessary for the effective teaching and learning of geography. In addition to allocating funds to the geography teacher for the procurement of relevant and essential instructional materials, it is also expected that the school authorities themselves acquire and make these materials available for use in the geography curriculum.

#### **2.4 How Instructional Materials Make Lessons More Mentally Stimulating**

Geography teachers should engage in thoughtful consideration and scholarly examination when selecting instructional materials that align with specific learning objectives. For example, young children exhibit a strong affinity for visual stimuli such as drawings and posters that employ vibrant and attention-grabbing hues. However, older children and adolescents may perceive these materials as lacking maturity, since they desire presentations that resemble those infrequently witnessed during their parents' professional engagements at home. Children who are at least 10 years old exhibit a strong affinity for engaging in puzzle-solving activities within an educational setting, particularly when their peers are involved as rivals. Therefore, strategies that are beneficial for one age group may be rendered obsolete or ineffective for

another. In the context of educating children with varying ages and cognitive abilities, it is imperative for geography teachers, including school instructors and class tutors, to possess the capacity to discern and select appropriate geographical instructional materials tailored to the specific age group of the children. Geographical instructional materials that are engaging have the ability to attract the attention of students and cultivate their interest in the subject matter. The use of multimedia materials, real-world illustrations, and interactive activities in geography has the potential to enhance the enjoyment and relevance of the learning experience, hence fostering student motivation and active engagement in the educational process (Chanchal, 2021).

By integrating appropriate teaching tools with classroom instruction, geography teachers can significantly enhance the efficacy of their lessons. One can also greatly augment the levels of engagement among children in educational settings, thereby improving the efficacy of instructional delivery in imparting the pertinent subject matter. Instructional materials that are well-designed have the ability to provide information in a manner that is both clear and organised, while also being visually appealing. According to Sari and Yuliani (2020), educational aids have the potential to enhance students' comprehension of intricate topics, facilitate a deeper understanding, and promote greater retention of information.

#### **4 Conclusion**

It can be inferred that the aforementioned points collectively support the notion that instructional materials play a crucial role in facilitating the attainment of educational objectives within a given nation. There is a noticeable deficiency in the availability of sufficient instructional resources within educational institutions, specifically pertaining to the subject of geography, which hinders the facilitation of efficient teaching and learning. It is imperative for school administrators to ensure the constant availability of essential materials for the instruction and acquisition of geographical knowledge. It is recommended that workshops be organised to raise awareness among geography educators regarding the difficulties associated with utilising instructional resources in the classroom. The significance of incorporating instructional resources into geography instructions should not

be disregarded. Hence, it is imperative to directly confront the obstacles that are experienced. This intervention is expected to contribute to the attainment of the objectives outlined in the curriculum, thereby enhancing the academic outcomes of the pupils.

The selection of appropriate geographical instructional materials has a crucial role in facilitating the acquisition of knowledge among young students, enhancing their learning outcomes, and promoting a deeper understanding of educational topics. Furthermore, these resources serve to alleviate the cognitive load experienced by students, providing assistance and augmenting their cognitive abilities. The aforementioned approach alleviates the monotonous nature of the subject matter and substitutes it with stimulating, interactive, and captivating material. Appropriate instructional resources have the potential to enhance teachers' effectiveness in delivering knowledge. Hence, it is imperative for educators to employ instructional materials that are suitable for the age group of their students, serving as teaching aids throughout various levels of the curriculum.

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