IMPACT OF INSTRUCTIONAL MATERIALS ON TEACHING AND LEARNING OF GEOGRAPHY IN SENIOR SECONDARY SCHOOLS IN YOLA NORTH LOCAL GOVERNMENT AREA OF ADAMAWA STATE

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Abstract

This study investigated the impact of instructional materials on the teaching and learning of Geography in senior secondary schools, in Yola North Local Government Area of Adamawa State. The population of the study comprised all the teachers and students in the study area, out of these 20 teachers and 380 students formed the sample of the study which was randomly selected. Three hypotheses were formulated. The instrument used for data collection was questionnaire, constructed on five Likert scales Strongly Agree (AS), Agree (A), Undecided (UD), Disagree (D), and Strongly Disagree. Data were analyzed using Chi-Square(X^2), and the hypothesis was tested at 0.05 level of significance and were all rejected. The findings revealed that modern instructional materials such as projectors, film strips slide series, etc. were inadequate for teaching and learning Geography. The study recommends that strategies should be developed for improving the current trends, some of which include the provision of instructional materials in sufficient quantity, Modern educational media should be provided, and state government conjunction with educational management should organize seminars and workshops for teachers to improve their professional skill and knowledge in improvisation and how to use available equipment.

Keywords: Instructional Materials, Teaching, Learning, Geography, Senior Secondary Schools

Introduction

Instructional materials serve as a channel between the teacher and the students in delivering instructions. They may also serve as the motivation for the teaching-learning process, it is used to get the attention of the students and eliminate boredom. Teachers rely on instructional materials in every aspect of teaching. Geography as one of the subjects in secondary schools will be better facilitated when suitable and relevant instructional materials are prepared and utilized during teaching and learning (Dhakal, 2014). Instructional Materials are print and non-print items that are designed to impact information to students in the educational process (Dahan, 2011). Aduwa (2005) argued that Instructional Materials include such as audio-Visual, audio, tape recorder, videos, slide projectors, filmstrips, maps, charts, graphs, pictures, electronic media and among others that are vital in the teaching and learning process. Instructional materials carry information to achieve the set objective in the

teaching and learning process. Agina-obu (2005), submitted that instructional materials of all kinds appeals to the sense organs during teaching and learning. Instructional materials play a very important role in the teaching and learning process, it enhances the memory level of the students. According to Butt (2011), teaching and learning resources support educators in making decision on what and how to teach. Instructional materials as devices which present a complete body of information and are largely self-supporting rather than supplementary in the teaching and learning process. The researcher adds that instructional material helps the teacher for easy delivery of the lesson; enhances learning and recalling on the part of the students.

Christensen (2010) explains that teaching and learning materials facilitate knowledge attainment. For example, an effective understanding of geography concepts can be possible through the usage of instructional materials. Therefore, geography teachers must renew various materials before going to teach to have enough knowledge of the subject contents, to provide and impart knowledge and skill to their learners effectively. For instance, a teacher who designs and applies local and modern instructional resources found their environment for the teaching-learning of geography to enable the students to learn effectively. Additionally, Ndalichako and Komba (2014) added that some subjects are looked at as optional subjects hence less emphasis is put by relevant authorities on ensuring there are adequate teachers as well as instructional materials. This has led to poor staffing for such subjects as geography and insufficient teaching and learning facilities.

A good selection and suitable use of teaching aid assist the teacher to cover more work in a short time. In a separate but related development Charles,(2009) posited that the teaching could not be adequate and effective where teachers/instructors rely solely on verbalisms means of classroom communication. Aydin (2011) points that Geography is a very colorful subject for students in secondary schools if the lessons are invigorated with various in and out of school activities. Instructional materials are necessary for effective lesson delivery as help the teacher to clarify, correlate and coordinate accurate concepts, interpretation, and appreciation to enable him/her to make teaching concrete, effective inspirational meaningful and vivid. The importance of instructional materials in teaching and learning geography in secondary school has been emphasized by Heffron and Downs (2012) who acknowledge that Geography is a dynamic and active discipline that reflects on the everyday lives of the learner. Tomal (2004) ,that the full and healthy Geography education provides a connection to other people in the world, relationship with the environment, perceive the skills, knowledge, concept and fundamentals that help human understand. ,

Recently, however, there has been widespread criticism of how schools subjects in particular Geography Subject are being taught in secondary schools to enhance the teaching /learning process.

The study, therefore, is set to examine the impact of instructional materials in teaching/learning Geography in Yola North Local Government Area of Adamawa State, Nigeria. Specifically, the study was to determine whether instructional materials make teaching and learning of Social Science subjects more real. To determine whether instructional materials make teaching and learning more interactive; and to determine whether instructional materials save time in teaching and learning.

Hypothesis

1. There is no significant relationship between instructional materials and the reality of teaching and learning
2. There is no significant relationship between instructional materials and interactive teaching and learning
3. There is no significant relationship between instructional materials and time usage in teaching and learning.

Research Methodology

This section presents methods and procedures that are applied in this study. It covered the Research Design, Area of the study, Population, Sample and sampling techniques, Research instrument, Method of data collection and Method of Data Analysis. The research used a descriptive survey design to determine the impact of instructional materials on the teaching and learning of Geography in senior secondary schools in Yola North Local Government Area of Adamawa State.

Area of the study

The area of study was Yola North Local Government Area of Adamawa State. The name Yola was derived from Fulfulde and was founded in 1918 by Modibbo Adama the Fulani leader. It has seven (7) district and covers an area of approximately 8060 square kilometers. The Geographical area in which the study was carried out is Yola north the capital city of Adamawa State which lies between latitudes 12' 15 North and 9' 15 North and comprises three (3) major ethnic groups that includes Fulani, Laka and Hausa. The people of the study area are predominately civil servants, while some involve in farming, trading and fishing. Fishing is commonly practiced because of the River Benue that runs by the side of the local Government areas.

Population and sample

The population of the study consists of the entire students and staff of Yola North Local Government Area of Adamawa State. The study area comprises ten (10) secondary schools. The simple random sampling technique was used to select the sample for students offering Geography and Geography teachers in the schools. Four secondary schools were picked at random and a sample size of four hundred (400) for both teachers and students offering Geography

Research Instrument

A self-structured questionnaire was developed by the researcher for the study. The questionnaire comprises (12) twelve items which sought information on the impact of instructional materials in teaching and learning Geography in Yola North Local Government area of Adamawa State requesting respondents based on the following scale, Strongly agreed (SA), Agreed(A), Undecided (U), Disagree (D) and Strongly disagree (SD).

The method used for the gathering of data for this study was the survey research method. It involves the use of questionnaires to obtain information from a large sample of respondents from selected secondary schools in Yola North Local Government area of Adamawa State.

The method of analyzing the raw data collected from respondents was Chi-square. This Chi-square calculated value and chi-square critical value had given a standard for acceptance or rejection.

$$\text{Thus } X^2 = \frac{\sum(O-E)^2}{E}$$

Where: X^2 = Chi-square

O =Observed frequency

E = Expected frequency

$\sum$ = Summation

Results and Discussion

Table1: Instructional materials make teaching/learning real

ITEMS	SA	A	UD	D	SD	Total
Instructional materials make teaching/learning real.	25(36.25)	20(25)	10(11.25)	20(13.75)	25(13.75)	100
Instructional materials improve the quality of the lesson	40(36.25)	20(25)	15(11.25)	15(13.75)	10(13.75)	100
Students learn better when instructional materials involve	40(36.25)	30(25)	10(11.25)	10(13.75)	10(13.75)	100
The use of instructional materials motivate students to learn	40(36.25)	30(25)	10(11.25)	10(13.75)	10(13.750)	100
Total	145	100	45	55	55	400

From the above table, the figures in brackets represent the expected values while those without brackets represent the observed values.

$$X^2 = \frac{(25-36.25)2}{36.25} + \frac{(20-25)^2}{25} + \frac{(10-11.5)^2}{11.5} + \frac{(20-13.75)^2}{13.75} + \frac{(25-13.75)^2}{13.75} + \frac{(40-36.25)^2}{36.25} + \ldots.$$

$X^2 = 27.55$

Degree of freedom (R-1) (C-1)

(5-1) (4-1)

4×3 =12

Level of significance =0.05

Chi-Square X^2 Calculated =27.55

Tabulated (critical) value =21.03

Table 1 showed the test of Hypothesis One, there is no relationship between instructional Materials and reality of teaching and learning of Geography. Regarding Hypothesis 1, statements 1, 2, 3 and 4 were chosen from the questionnaire to test the hypothesis. Where the level of significant 0.05.

The decision rule is as follows, the null hypothesis (H_O) will be accepted if the chi-square calculated value is less than the tabulated values. Thus, X^2 calculated value as seen above is greater than the tabulated value that 27.55≥ 21.03. Therefore, there is a significant relationship between instructional materials and the reality of teaching and learning Geography.

Chi-square test of whether instructional Material makes teaching /learning real

Cal X^2	Critical Value	df	level of sign.	Decision
27.55	21.03	12	0.05	rejected

Table 2: Instructional materials make teaching/learning interactive

S/N	ITEMS	SA	A	UD	D	SD	Total
5.	Teachers allow students to	45(43.75)	35(37.5)	5(6.25)	10(6.25)	5(5,75)	100

	contribute when instructional materials are involved						
6.	Instructional materials make teaching/learning interactive	40(43.75)	35(37.5)	10(6.25)	10(6.750	5(5.75)	100
7.	Teachers allow students to practice when instructional materials are involved	50(43.75)	40(37.5)	5(6.25)	2(6.75)	3(5.75)	100
8.	Teachers involve students in the arrangement and organization of instructional materials for classroom activity.	40(43.75)	40(37.5)	5(6.25)	5(6.75)	10(5.75)	100
	Total	175	150	25	27	23	400

Table 2 instructional materials make teaching/learning interactive

From the above table, the figures in bracket represent the expected values while those without bracket represent observed values

$$X^2 = \frac{(45-43.75)^2}{43.75} + \frac{(35-37.5)^2}{37.5} + \frac{(05-6.25)^2}{6.25} + \frac{(10-6.25)^2}{6.25} + \frac{(05-5.75)^2}{5.75} + \frac{(40-43.75)^2}{43.75} + \cdots \frac{(10-5.75)^2}{5.75}$$

Level of significance = 0.05

Chi-Square X^2 Calculated = 38.39

Chi-Square critical (Table value) =21.03

Table.2 showed the test of hypothesis 2, there is no significant relationship between instructional material and interactive teaching and learning of Geography. Statements 5, 6, 7 and 8 were chosen from the questionnaire to test hypothesis two.

Level of significant 0.05P-value 0.000

The decision rule is as follows, the null hypothesis (Ho) will be accepted if the chi-square calculated value is less than the tabulated values, thus X^2 calculated value as seen above is greater than the tabulated value that 38.39≥ 21.03. Therefore, there is a significant relationship between instructional materials and interactive teaching/learning.

Chi-square of whether instructional materials make Teaching/learning interactive

Cal X^2	Critical value	df	level of sign	decision
38.39	21.03	12	0.05	rejected

Table 3: Instructional materials save time on teaching /learning

ITEMS	SA	A	UD	D	SA	Total
The use of instructional materials does not consume time	40(45)	30(37.5)	10(6.25)	5(3.75)	15(7.5)	100
Instructional materials save time during lesson presentation	50(45)	40(37.5)	05(6.25)	02(3.75)	03(7.5)	100
Lessons are completed within a stipulated time	50(45)	40(37.5)	05(6.25)	03(3.75)	02(7.5)	100
Instructional materials make teaching/learning precise	40(45)	40(37.5)	05(6.25)	05(3.75)	10(7.5)	100
Total	180	150	25	15	30	400

$X^2 = \frac{(40-45)^2}{45} + \frac{(30-37.5)^2}{37.5} + \frac{(10-6.25)^2}{6.25} + \frac{(5-3.75)^2}{3.75} + \frac{(15-7.5)^2}{7.5} + \frac{(50-45)^2}{45} + \frac{(40-37.5)^2}{37.5} + \ldots \frac{(10-7.5)2}{7.5}$

Chi-Square calculate $X^2 = 26.94$

Chi-Square Critical (Table Value) =21.03

Table 3 showed the test of hypothesis three, there is no significant relationship between instructional materials and time usage in teaching /learning Geography. Statements 9, 10, 11, and 12 were chosen from the questionnaire to test hypothesis three

The decision rule is as follows, the null hypothesis will be accepted if the calculated value is less than the tabulated value. Thus X^2 calculated value as seen above is greater than the tabulated value which is $26.94 \geq 21.03$, therefore, there is a significant relationship between instructional materials and time usage in teaching and learning Geography.

Chi-square test of whether instructional materials save time in teaching/learning

Cal X2	Critical Value	df	level of sign	decision
26.94	21.03	12	0.05	rejected

Discussion

Based on the data presented, and analyzed with three hypotheses using Chi-square. It was discovered that analysis of the hypothesis one result using chi-square at the 0. 05 level of significance, noticed that the calculated value was 27.55 while the critical (table value) is 21.03. It was discovered that the chi-square value was greater than the critical value, therefore, the null hypothesis which states that there is no significant relationship between instructional materials and the reality of teaching and learning Geography was rejected this means, there is a significant relationship between instructional materials and reality of teaching and learning. This was confirmed by with Kishore,(2003) who said that instructional materials stimulate thinking and give opportunity to the students with more authenticity. Also, Okobia (2011) says the involvement of teachers and learner in improvising material allows students and teachers to concretize their creativity, resourcefulness and imaginative skills.

Analysis from Table 2 showed whether instructional materials make teaching/learning interactive revealed that the Chi-square calculated was greater than the chi- Square critical at 0.05 level of significance, therefore, the null hypothesis which states that there is no significance between instructional materials and interactive of teaching/learning Geography was rejected, and the alternative was accepted, which mean there is a significant relationship between instructional materials and interactive in teaching and learning. The use of instructional materials in teaching is significant because it enables the teacher to make the lesson more interesting and interactive, and use fewer words, therefore less energy is used in the explanation of points. Oladejo (2011), observed that instructional materials allows student's interaction which make students to achieve better in the lesson. This is because it makes students use their intellectual ability during teaching and learning process.

Analysis from Table 3 showed whether instructional materials save time revealed that the Chi-square calculated was also greater than chi-square critical value at 0.05 level of significance, hence, the null hypothesis which states that there is no significant relationship between instructional materials and time usage in teaching /learning of Geography was rejected, and the alternative was accepted which means that there is a relationship between instructional materials and time usage

in teaching and learning. The result agrees with Damar, (2004) that careful selection of instructional materials should be done based on the content of the lesson, set educational objectives, and the learner's characteristic age, grade level and learning habit. Garba, (2016) pointed out that appropriate and efficient use of instructional materials normally enables the learner to cover more work in less time.

Conclusions and Recommendations

The purpose of the study was to determine the impact of instructional materials in teaching and learning Geography in senior secondary schools in Yola North Local Government Area of Adamawa State. This research was carried out with three hypotheses using a descriptive survey designed in four sampled senior secondary schools such as Capital day secondary school, Doubeli, Gwadabawa and Karawa. A questionnaire containing twelve (12) items was used and rated on five points Likert scale with 0.05 level of significance. The data was presented in tables for analysis and the result obtained from analysis of one of the survey showed that instructional materials make teaching and learning more real and, with the use of instructional materials the students' attention is more attracted to teacher illustrations and explanation. Students respond more positively to questions than when the teacher does not use instructional material.

The students have more interest and concentrate on the lesson with the instructional materials compared to lessons without the use of instructional materials. Instructional materials serve as a tool, which teachers use for the effective completion of the task. Like farmers on the farm without working tools would do nothing, a teacher without instructional materials would end up without the students being properly instructed. Instructional materials enable the teacher to complete his planned lesson within a stipulated time without using more words and energy.

Recommendations

In light of the finding obtained from this study, the following recommendations are made

1. State Government in their joint effort should organize seminars and workshops for teachers to improve their professional skills and knowledge in improvisation and how to use the available equipment. This is because, some complicated equipment such as micro-projection, and computer overhead projector is not easy to operate and so need training.
2. Stakeholders in education should provide instructional materials to schools insufficient quantities and also they should improve the condition of all social science laboratories by supplying laboratory facilities.
3. Principals of schools should encourage the teachers to use instructional materials in the teaching of social science subjects by close supervision and also a constant supply of the instructional materials.
4. Teachers should be encouraged to improvise the local materials around their environment in the absence of the original materials.
5. Teachers should consider it as a point of duty to use instructional materials in teaching and learning.

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