

The Effect of the Use of Models in Teaching on Students' Achievement in Social Studies in Nasarawa State, Nigeria

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ABSTRACT

This study examines the effect of models on students' achievement in social studies in Nasarawa State upper Basic Education Level (JSS 1-3). A pretest and post test experimental control group design is employed. A sample of 220 upper basic two students is randomly selected for the study. Research hypotheses are formulated and tested at 0.05 significant level and a 30 item social studies achievement test (SOSAT) is used for data collection. A descriptive statistics is used to analyse the data. Student t-test is used to test the hypotheses formulated for the study. The results of the findings show that the experimental group that utilized models performed better than the control group. The post test mean achievement scores of gender is not statistically significant. It is therefore recommended that social studies learning should be taught using models to drive home difficult concept in the subject to the students.

Keywords: Social studies, models, student achievement, upper basic education

INTRODUCTION

Social studies as a core subject at the upper Basic Education level in Nigeria (FGN, 2004) is gaining ground in the educational system. It is now been offered as a course of study at the NCE, undergraduate and post graduate level in most Colleges of Education, Polytechnics and Universities. Not much has been written on the use of models in social studies teaching at the upper Basic Education level. Bozimo (2002) and Kuest (2000) emphasize on the need of the use of instructional materials in teaching. Instructional materials have some qualities that are very crucial in social studies teaching and learning. The world is said to be a global village today because of the global technological advancement which has made life in the entire universe much simpler and more comfortable Gbodi and Dantani (2009). The advancement in technology which is occasioned by projected and non-projected, visual and auditory, audio-visual electronic materials are important land marks in knowledge transfer. These make learning and teaching much more easier and concrete. Emphasising on the relevant of instructional materials, Onyejemezi (1981) stresses that for effective achievement of the aims

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and objectives of a lesson, instructional materials must be an intrinsic part of the teaching and learning. To be effective, all instructional materials, according to Onuoha and Okam (2012), require serious planning and preparation on the part of the educator. They further assert that the benefits derived by learners from any instructional aid depend on the ability of the educator to use it appropriately in teaching and learning session. It is therefore imperative for the educator to be highly skilled and knowledgeable in the technique and periods for effective use of these materials.

Models may be described as a recognizable representation of a real thing. It is the closest alternative to the real thing and often more suitable for teaching purposes (Okwo and Ike, 1995). The construction of models can be done in such a way that it represents an enlarged, reduced or the exact size of the real thing. In social studies, teaching the topic, “the continent of the world”, the globe, a reduced model of the earth can be very useful. Models as a contrived experience are an important instructional material as it appeals to all the sense organs when utilized for teaching and learning purposes. It makes learning more realistic and stimulates students’ participation which brings out desirable behaviour, knowledge and at the same time satisfactions on the part of the students and teaching alike. The aim of this study, therefore, is to examine the effect of models in teaching on student achievement in social studies in Nasarawa State upper Basic Education Level (Junior Secondary School 1-3). The following research hypotheses were formulated to guide the study:

- H₀1: There is no significant difference in the pretest and post test mean scores of students assigned to experimental and control conditions.
- H₀2: There is no significant difference in the mean achievement scores of male and female experimental groups in the rural area.

METHOD

The study employed a pretest, post test quasi experimental control group design. Keffi Inspectorate Education Zone “C” was randomly selected out of the three zones in Nasarawa State. Zone “C” was grouped into rural and urban areas. Three schools were randomly selected from each area. The upper Basic Education two (JSS 2) served as the subject for the study. From the intact classes taught, a sample of 240 students was randomly selected from the school, that is, 40 students (20 males and 20 females) from each school. Two schools in each of the stratified areas (rural and urban) were randomly assigned to treatment and control situations. Thirty item multiple-choice objective questions were developed by the researchers from the concepts taught and appropriate lesson plans with and without models made up the instrument. The social studies achievement test (SOSAT) was adopted from the Basic Education school certificate examination (BESCE) on social studies.

The instrument was duly validated by experts as well as employing Kuder Richardson (Kr – 21) formula to obtain a reliability coefficient of 0.83. The experimental group was treated to an instruction using models. While the control group has the traditional method of chalk and talk without the use of models. Pretest was administered to both the control and experimental groups during the first week and before the commencement of the study. The treatment was carried out for a period of four weeks. The teaching for the experimental group was done with the use of models as instructional materials. The models that were used include the Globe, posters of leaders, human kidney and human skull. The control group had the talk and chalk method using diagrams without model. Immediately after the treatment, a post-test was administered. The pretest and post test scores were collated and analyzed using the descriptive statistical tool and t-test was used to test the research hypotheses.

RESULTS AND DISCUSSION

From table 1, the experimental group has pretest mean score of 2.5478 with standard deviation of 1.18650 while the control group has mean score of 2.6381 with standard deviation of 1.23354. From the foregoing, it is evident that the pretests mean scores of students assigned to experimental group differs slightly from those in the control group by 0.0903 in favour of the control group. From Table 2, the 115 JS 2 students in experimental group has post-test mean score of 12.7478 with standard deviation of 3.79021 while the 105 JS 2 students in control group has mean score of 11.1048 with standard deviation of 4.33440. The means score difference of 1.6430 noticed is in favour of the experimental group. Hence, the experimental group scored higher than those in control group.

To test the hypothesis 1, data relating to pretest posttest mean scores are analyzed and presented in the Table 3. From the table, reading across row heading Group, $F_{1,220} = 46.608$, $df = 1$, $Sig. = .000 = p$. Since p is less than 0.05 this means that the difference between the experimental and control groups noticed is significant in favour of the experimental group. Hence, the hypothesis that there is no significant difference in the pretest and posttest mean scores of students assigned to experimental and control conditions is rejected. So, the conclusion is that there is significant difference in the pretest and posttest mean scores of students assigned to experimental and control conditions. The experimental group has performed significantly better than the control group.

To test the hypothesis 2, data relating to mean scores male and female students are analyzed and presented in the table 4. From the table, reading across row heading Sex, $F_{1,220} = 1.632$, $df = 1$, $Sig. = .204 = p$. Since p is greater than 0.05, it means the difference between male and female students noticed is not significant. Therefore, the hypothesis which states that there is no significant difference in the mean achievement scores of male and female experimental

groups in the rural area is accepted. Hence, it is concluded that there is no significant difference in the mean achievement scores of male and female experimental groups in the rural area.

Table 1: Pretest scores of experimental and control groups pretest scores

Group	Tests	Mean	Std. Deviation	N
Experimental Group	Pre-SOSAT	2.5478	1.18650	115
Control Group	Pre-SOSAT	2.6381	1.23354	105
Pretest Mean difference		0.0903		

Table 2: Means and standard deviation of experimental and control groups achievements

Group	Tests	Mean	Std. Deviation	N
Experimental Group	Pre-SOSAT	2.5478	1.18650	
	Post-SOSAT	12.7478	3.79021	115
Control Group	Pre-SOSAT	2.6381	1.23354	
	Post-SOSAT	11.1048	4.33440	105
Post-test Mean difference		1.6430		

Table 3: ANCOVA between experimental and control groups

Dependent Variable: Post Test

Source	Type III			F	Sig.
	Sum of Squares	df	Mean Square		
Corrected Model	2814.470 ^a	2	1407.235	330.044	.000
Intercept	764.006	1	764.006	179.185	.000
Pre Test	2666.295	1	2666.295	625.337	.000
Group	198.727	1	198.727	46.608	.000
Error	925.239	217	4.264		
Total	35228.000	220			
Corrected Total	3739.709	219			

a. R Squared = .753 (Adjusted R Squared = .750)

Table 4: ANCOVA between male and female students in experimental group

Dependent Variable: PostTest

Source	Type III			F	Sig.
	Sum of Squares	df	Mean Square		
Corrected Model	1174.391 ^a	2	587.196	141.952	.000
Intercept	624.304	1	624.304	150.923	.000
PreTest	1173.719	1	1173.719	283.742	.000
Sex	6.750	1	6.750	1.632	.204
Error	463.296	112	4.137		
Total	20326.000	115			
Corrected Total	1637.687	114			

a. R Squared = .717 (Adjusted R Squared = .712)

CONCLUDING REMARKS

The study aimed at investigating whether the use of models would help enhance the teaching and learning of social studies concept both for male and female students. The confirmation from the result of the study shows that there is every need to stimulate students learning with instructional materials that will make their learning more concrete. The use of models which is a representation of the real thing help drive home some difficult concept in social studies. Based on the findings the study recommends that social studies teachers should take up the challenge of using instructional materials that will help concretize students learning.

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