Journal of Education and Practice www.iiste.org
ISSN 2222-1735 (Paper) ISSN 2222-288X (Online)
Vol.8, No.22, 2017

Effect of the Use of Stream Charts on Primary School Pupils Achievement in Social Studies

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Abstract
Primary education is the foundation of educational structure an the key to the success or failure of the whole education system. The study effect of the use of stream charts on primary five pupils' achievement in social studies is an attempt to make teaching and learning of social studies more concrete at the primary school level. The study employed a pre-test and post-test experimental control group design. The experimental group was stratified into rural and urban areas. 150 primary five pupils were selected using Random sampling techniques. The research hypothesis were tested at .05 significant level and a 25 items social studies achievement test (SOSAT) was used for data collection. The finding showed that the experimental group that utilized stream charts performed better that the control group, the pretest mean achievement scores of male and female were not statistically significant. It was recommended that stream charts should be highly employed in learning and teaching of social studies.

INTRODUCTION

Education is a process which aims at changing the behaviour patterns of the learner in his direction of desirable objectives, Sule (2009) primary education is very essential in the development of any nation. It is very important because it is a place where the proper tomorrow can and must be built. Fatunwa (2003) assert that primary education is the education that involves all efforts, conscious and direct, incidental and indirect that helps to accomplish certain objectives that are considered desirable in the society.

Primary education is the foundation of education structure and the key to the success or failure of the whole education system. Gbodi (2006) maintained that if the foundation of any building or project is faulty the building the need for a solid foundation at the primary level.

Collaborating Gbodi Adikwu and Obinne (2010) asserts that the primary education is the foundation and when the foundation is weak the entire system will definitely be affected. It's in realization of this, that the nation pursued programmes that are geared towards improving the teacher of this system especially at the primary school level. The capacity building workshops organized for primary school teachers is aimed at achieving this goal.

In Nigeria, one of the aims of primary education is to provide tools for further education advancement including preparation for trades and crafts of the locality, FGN (2004). The reason is that curriculum cannot be thrown into the labour market with the acquisition of basic education and technical skills that will make them function efficiently in a modern industrial society.

Children at the primary school leek are not the level of abstraction on the Edgar Dale's cone of experience also termed concrete operational state by piaget for pupils to effectively achieve from the subject the social studies teacher must ensure that instruction at this level must be abstract in nature but full of varieties of experience that will help them conceptualize difficult and abstract concepts Gbodi (1998).

Social studies as a subject is relatively new in the educational system. It is one of the core subjects studied at the basic education level in Nigeria FGN (2004) many teachers of social studies in Nigeria are said to be ineffective because they continue to use the method of chalk and talk without employing those instructional materials that will stimulate the pupils. Pupils are expected to use their senses in order to make learning effective Hanior and Samuel (2013). With appropriate instructional materials, the teaching will be more concrete and effective.

Stream charts belong to a class of instructional materials. Stream charts are used to illustrate development, growth and changed by beginning with a single source (the trunk, or the main body of a stream) which spread or branches out into many branches or tributaries. It may also begin with many tributes of a stream Okwo and Ike (1995).

Stream charts can be used to illustrate concepts in different subject areas, in social studies the genealogy of a family starting from the single parents, developing to children, grand children and grate grand children can be present in a stream or tree chart.

RESEARCH HYPOTHESIS

Three research hypotheses were formulated and tested.
Ho_1: There is no significant difference in the pre-test mean scores of pupils assigned to experimental and control conditions.

Ho_2: There is no significant different in the mean achievement scores of pupils taught some concepts in social studies with the use of stream charts and those taught without stream chart.
Ho_3: There is no significant difference in the mean achievement scores of male and female experimental group.

METHOD

The study employed a pretest and post test quasi experimental control design Lafia Education Zone was randomly selected out of the three Education zones in Nasarawa State. The Lafia Education zone was grouped into urban and rural schools. Four schools were randomly selected from each area. primary five pupils served as the subject for the study. From the intact classes taught, a sample of 150 pupils, male and female were randomly selected from the schools, that is 40 pupils (20 males and 20 females from each areas (rural and urban) was randomly assigned to treatment and control situations.

A 25 items multi choice objectives questions from the concepts taught and appropriate lesson plans with and without stream chart made up the instrument. The social studies achievement test (SOSAT) was adopted from the previous state common entrance examination on social studies concepts from social studies syllabus. The instrument was validated by experts as well as employing Kuder Richardson (Kr-21) formula to obtain a reliability coefficient of 0.83. The topic treated were the family, civic responsibilities, the fundamental human rights and our values.

The treatment given to the experimental group was the stream chart instruction, a systematic designed instruction incorporating the use of stream chart. The control group has the conventional method of chalk and talk without the use of stream chart. Pretest was administered to both the control and the experimental group during the first week and before the commencement of the study. The treatment lasted for a period of four weeks. The instruments for the experimental groups were accompanied by the use of stream chart as instructional materials. The control group had the talk and chalk method without the use of stream charts. After the treatment, a post-test was administered.

Both pre-test and post-test scores were collated and analyzed using the descriptive and ANCOVA statistical analysis to test the hypotheses.

RESULTS AND DISCUSSION

The results of the study were organized around the research hypotheses and are presented s follows:
$H0_1$: There is no significant difference in the pre-test and mean scores of pupils assigned to experimental and control conditions.

Table 1: Descriptive Statistics pretest posttest experimental and control groups

Test	Group	Mean	Std. Deviation	N
Pre-SOSAT	Experimental Group	2.5556	1.25473	72
	Control Group	2.7179	1.22631	78
	Total	2.6400	1.23853	150
Post-SOSAT	Experimental Group	12.7083	4.07133	72
	Control Group	11.2564	4.45303	78
	Total	11.9533	4.32153	150

Table 1 shows the result of pre-test and posttestt for experimental and control groups. The mean pretest scores for experimental group is 2.5556 while that of the control group is 2.7179. The posttest for experimental group is 12.7083 while that of the control group is 11.2564. The posttests mean difference of the two groups is 1.4519 in favour of the experimental group is noticed.

Testing the noticed difference, the Table 2 is used.

Table 2: ANOVA of the experimental and control groups

Dependent Variable:PostTest

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	2148.675[a]	2	1074.338	249.098	.000
Intercept	436.370	1	436.370	101.178	.000
PreTest	2069.749	1	2069.749	479.896	.000
Group	140.541	1	140.541	32.586	.000
Error	633.998	147	4.313		
Total	24215.000	150			
Corrected Total	2782.673	149			

a. R Squared = .772 (Adjusted R Squared = .769)

From Table 2, F1,150 =32.586, df =1 and Sig. =.000 =p. since p is less than 0.05, the difference noticed is significant to reject the hypothesis and conclude that there is a significant difference in the pre-test and mean scores of pupils assigned to experimental and control conditions.

Ho_2: There is no significant difference in the mean achievement scores of pupils taught some concepts in social studies with the use of stream charts and those taught without stream charts.

Table 3: t –test statistics of experimental and control groups

Test	Group	N	Mean	Std. Deviation	t	df	Sig.(2-tailed)
PostTest	Experimental Group	72	12.7083	4.07133	2.079	148	.039
	Control Group	78	11.2564	4.45303			

Table 3 shows the results of the post test mean scores for experimental and control groups. The mean post test scores for experimental group is 12.7083 while that of the control group is 11.2564. The t-test calculated is 2.079 with df =148 and Sig.(2-tailed) =.039 =p. Since p is less than 0.05 it shows that there is a significant difference between the experimental and control group at the 0.5 significant level (real) so, the hypotheses 2 is therefore rejected. The experimental group that was exposed to stream chart usage performed better than the control group that was not exposed to it. This shows that the use of stream charts enhanced the learning of social studies among primary school pupils. The results agree with Bozimo (2002) Adekeye (2008) and Green (2001) who emphasized that the use of instructional materials is siye quo non in affecting behaviour of learners of every field. Onyejemezi (1981) asserts that instructional materials do not achieve any of the attributed value on their own, their usefulness depend on what the teacher makes of them.

Ho_3: There is no significant difference in the mean achievement scores of male and female experimental groups in the rural area.

Table 3: t –test statistics of male and female students in experimental group

Test	Sex	N	Mean	Std. Deviation	t	df	Sig.(2-tailed)
PostTest	Male Students	48	12.8125	4.32044	.305	70	.761
	Female Students	24	12.5000	3.59952			

Table 3 shows the result of the post testy based on gender (experimental) groups. the post-test mean achievement scores of male pupils is 12.8125 while that of the female is 12.5000. The t-value calculated is .305 for df = 70 while Sig.(2-tailed) =.761 =p. Since p was greater than 0.05, this implies that there is no significant difference in the mean achievement scores of male and female experimental groups.

No gender difference is seen in the learning of social studies using stream chart. From the analysis and the findings the study agrees with Ajiboye (1996) Gbodi and Lateye (2006) whose findings shows that gender has no effect on students achievement in discipline like social studies geographically and sciences respectively.

Findings however disagrees with pupils perform better than females counterparts across disciplines. Nworgu (1990) and Okafor (2000) all identified gender as a relevant factor in academic achievement.

CONCLUSION AND RECOMMENDATION

The study aimed at investigating whether the use of stream charts would significantly enhance the learning of social studies at the primary school level both in the rural and urban areas and to test the gender achievement level using stream chart using SOSAT as a yardstick for measurement. However, the result of the study confirms the desirability of using stream charts in learning of social studies by both male and female pupils.

The study recommended that primary school social studies teachers should be up a closing an ensuring that effective communication at the learners level is enhanced.

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