

Assessing the Use of Pictorial Simulations in Teaching Social Studies in Chanchaga Local Government Primary Schools of Niger State, Nigeria

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Abstract

The study assessed the effective use of instructional materials in the teaching of social studies. The Pre-test - Post-test Experimental - Control Group design was adopted for the purpose of data collection. One instrument, "Culture and Identity Test" (CIT) designed by the researcher and validated by seasoned educationist were use for data collection. Two hundred students randomly selected from four primary schools in Chanchaga Local Government Area of Niger State were used for the study. The pupils were assigned into two groups the experimental and control groups. The experimental group were taught with pictorial simulations while the control group were taught without the use of pictorial simulations. Both groups were pre-tested before being taught the concept of 'Culture and Identity'. A post-test was given to the two groups after four weeks of teaching. The test was appropriately scored. The data obtained were analyzed using group mean, standard deviation and t-Test Statistic to test the two study hypotheses. The findings showed that the use of pictorial simulations in teaching social studies greatly improved the performance of pupils in the subject. It was therefore recommended among others that, teachers should use pictorial simulations in teaching pupils to make instruction effective.

Introduction

Pictorial Simulations are the non-projected visual aids that students can effectively see and which can enhance their understanding of instruction. Hale (1964), R. Sivakumar (2018) report clearly stated that pictorial simulations include such items as pictures, drawings, charts, maps etc. that improve the quality and range of instructions. Onyejemezi (1984), James Balm (2014) delimits the scope of pictorial simulations and differentiates them from the broad based concept of educational technology, contrary to what many people think that they constitute educational technology. Schramm (1977), S.L. Hannel and J.Cuevas (2018) describes pictorial simulations as information carrying technologies that are used for instructional purposes with the aim of delivering educational instruction very

quickly and widely. According to them, such pictures should be easily understood and should convey lucid messages and should be as real as possible. Allen (2011) asserted that pictures are devices which present a complete body of information and are largely self-supporting, rather than supplementary in the teaching - learning process.

Pictures, as parts of non-projected visual materials, significantly enhance teaching and learning. The aim of the 9 - 3 - 4 system of education in Nigeria is basically to re-direct our national objectives towards a sound development and a strong attainment of a profitable education in the field of Science and Technology. Y. Nafidi, A. Alami et al (2018) observed the absence of creative environments that can stimulate the acquisition of technological skills. They forcefully stated that the typical classroom is very conventional, having little or nothing, which can excite students' imagination and trigger off discussion. They are of the opinion that pictures ensure the effectiveness of teaching and learning by concretizing ideas and engendering creativity. Such effectiveness is predicated on the obvious advantages which pictures inject into teaching and learning situations.

Children are likely to understand and learn faster if concepts are given to them in the form they are familiar with using pictures and play activities. When a conducive environment is created for the children to learn, they may be able to move more rapidly through the stage of intellectual development, using their attributes of spontaneity, creativity and their energetic abilities (Adeyanju, 1987), S. Afraz (2018). The skills children gain at this level of education could lead to future productivity of intelligent, self-reliant, skilled craftsmanship of high repute (Adeyanju, 1987). Lee and Coppen (1968), Bethann G. Merkle (2014) noted that the skill of the teacher to use pictorial aids is imperative if teaching is to be made easier and enjoyable. Children in the primary school could be made to enjoy the pictorial contents in a more conducive teaching and learning environment. Pictures can be produced to enhance learning in the classroom. Pictures are examples of materials that could be produced at cheaper rate and at a short time frame.

However, inadequate utilization of pictures by Social Studies teachers in teaching the subject in primary schools today engendered the study. The study by Adeyanju (1985), Jennifer Davis Bowman (2018) revealed that pupils considered simple topics very difficult because the teacher failed to use materials that will help the pupils understand them. Children at the primary schools level are at the preparation and developmental stage of learning that require materials, that will appeal to them so that they will understand and pay much attention. Primary education according to the National Policy on Education is the education given to children within the age bracket of six and twelve. It is also described by some educationists as the foundation stone upon which all other levels of education are built upon. Others see it as the pivot of the educational system anywhere in the world. Therefore, the quality of the educated citizens any where depends largely on the soundness of the National Policy on Education system (NPE, 2019).

For learning to be effectively carried out, therefore, the contemporary focus today is on Educational Technology, with great emphasis on instruction through the media. Many researchers have given different descriptions of educational

technology. Hawkridge (1987) Joseph Lathan (2021), are of the opinion that “educational technology has changed the traditional roles of teachers through the acquisition and use of skills, resources and procedures for improving instruction. The value of educational technology lies in its ability to actively assist the learners, learn better, understand deeper, retain longer and apply more accurately what has been learnt”. Heinrich (1978), Joseph Lathan (2021), views educational technology as “systematic use and involvement of scientific or other organized knowledge to the solution of problems and tasks of education to produce intended goals”. Association of Educational Communication and Technology (AECT), Brown, Lewis and Harclerod (1977) defined educational technology as “a systematic way of designing, carrying out and evaluating the total objectives, based on research in human and non human resources, to bring about more effective instruction in a given environment” Delgado et al (2015) defined educational technology as “a purposeful utilization, in combination or separately, of objects, to increase the effectiveness of the educational process”. It is evident that educational technology is involved with and sustained by techniques, skills devices and competencies, die neglect of which have to a large extend impede efforts at excellence in our educational system (Obianwu and Azubike, 2015).

Statement of the Problem

Social Studies is an organized integrated study of man and his physical and social environment, emphasizing cognition, functional skills and desirable attitudes and actions for the purpose of creating an effective citizenry (Ololobou, 1986), SD. Edinyang (2019). The need for better quality of instruction in our primary schools in general and social studies in particular, makes a case for more effective utilization of instructional resources for teaching the subject. Mkpa (1986), SD. Edinyang (2019), asserts that “the nature of social studies demands a wide range of resources of diverse types. Primary education being the basis of any learning requires the employment of a variety of teaching aids. Tire problem with teaching of social studies in our primary school today, is that teachers teach the subject without using any pictorial simulation or materials to backup their explanation. It is believe that the use of pictorial simulation will greatly improve the pupils performance because it appeal greatly to the sense of sight and children learn better through what their see, they can be able to recall and explain what they see better. Children are likely to understand and learn faster if concepts are given to them in the terms they are familiar with using pictorial simulation and play activities. The study, therefore, is aimed at assessing the use of pictorial simulations in the teaching of Social Studies in the primary school.

Research Questions

- i) Will the use of pictorial simulations result in differential performance of the experimental and control groups in Social Studies?
- ii) Will the use of pictorial simulations result in differential performance of the boys and girls in Social Studies?

Hypotheses

The following null hypotheses were formulated and tested at 0.05 significant levels.

H (0)1 There is no significant difference in the performance of pupils taught using pictorial

Simulations and those taught without pictorial simulations.

H (0)2: There is no significant difference between the performance of boys and girls taught using pictorial simulations.

Purpose of the Study

The purpose of the research is to assess the effectiveness of using pictorial simulations in teaching Social Studies in primary schools. It is hoped that the findings of this research might:

- (i) Lead to the improvement of social studies instruction in primary schools.
- (ii) Enable educational planners and administrators to see the need for providing pictorial simulations in primary schools.
- (iii) Encourage Social Studies teachers to make effective use of pictorial simulations while teaching and also improvise, were necessary without waiting for the government to provide everything.

Methodology

The study employed Pretest - Posttest Experimental - Control Groups design. Samples of two hundred pupils were selected for the research (100 boys and 100 girls). The pupils were drawn from four randomly selected primary schools in Chanchaga Local Government Area of Niger State.

In each school, fifty primary six pupils were selected randomly for the study. The pupils were assigned to experimental and control groups by random sampling method through what is called draw from the hat technique. The technique involves squeezing marked and unmarked pieces of papers put in a hat for each of the pupils to pick one. After picking, the pupils opened and joined the marked group: Those that were marked as experimental group and those unmarked as control group. For the purpose of this research, the treatment instrument used for the study is made up of forty (40) multiple choice items covering Culture and Identity topics and drawn from the past common entrance examination questions in the field of Social Studies. It is named the Social Studies Concept of Culture and Identity Achievement Test (SSCCIAT). The instruments were validated by three experts in Social Studies. It was also tried out in the field and found to be adequate for the study.

Before teaching, the two groups, both groups were administered with pretest to determine whether the two groups were the same in terms of their previous knowledge of the subject. At the end of one week revision period, the groups were administered with posttest. The test was scored. The test scores formed the data were analyzed using Statistical Package for the Social Sciences (SPSS) at 0.05 significant level. The statistics used to analyze the data gathered for the study are as follows:

- Means,
- Standard Deviation,
- t-Test

Findings and Discussion

The following are data generated from the selected primary schools in Minna, Niger State. The statistical test result for the data collected and the null hypotheses. Means, standard deviation and t-Test statistical measures were use for the analysis.

Pretest Performance of Experimental and Control Groups

Table 1: Mean, Standard Deviation and t-Test for Experimental and Control Groups pretest scores.

Groups	Number	Mean (x)	Standard Deviation	t-value	F- ratio	P
Experimental	100	26.07	7.9	0.82 ^{ns}	0.67 ^{ns}	0.413
Control	100	26.59	7.73			

ns. Not significant at the 0.5 level.

Table 1 showed the result of the statistical analysis. There was no significant difference on the pretest score of the experimental and control groups ($t = 0.82$; $F = 0.67$) $P < 0.05$. The pupils in both groups were found to be equivalent in relation to their prior knowledge of the Social Studies concept of “culture and identity”.

Posttest Result for Experimental and Control Groups

Hypothesis one (H₀): There is no significant difference in the performance of pupils taught with pictorial simulations and those taught without pictorial simulations.

Table 2: Mean, Standard Deviation and t-Test of Experimental and Control Groups on the posttest scores.

Groups	Number	Mean	Standard	t-value	F-ratio	P
		(x)	Deviation			
Experimental	100	76.4	10.86	49.60*	2460.16	0.0001
Control	100	39.66	8.24			

* Significant at the .05 level.

The result of the statistical test on table 2 showed that the mean score for die experimental group was 76.40 and 39.66 for the control group. The t- value of 49.60 was significant at the 0.05 level ($P < 0.05$). The experimental group taught using pictorial simulations performed significantly better than the control group taught without pictorial simulations. It could be stressed, therefore, that the use of pictorial simulations improved the performance of the pupils in Social Studies. Therefore, the hypotheses that stated there is no significant difference in the performance of pupils taught with pictorial simulations and those taught without pictorial simulations is, rejected.

Performance According to Gender

Hypothesis two (H_{0_2}): There is no significant difference between the performance of boys and girls in the concepts of culture and identity using pictorial simulations.

Table 3: Mean scores, Standard Deviation and t-Test result of posttest scores comparing Experimental group by Gender category

Gender	Number	Mean (x)	Standard Deviation	t-value	F-ratio	P
Boys	50	84.72	5.58	11.54	133.17	0.001
Girls	50	68.7	8.07			

* significant at the .05 level.

The scores on table 3 revealed that the mean score for boys was 84.72 while that of the girls was 68.70. The findings from the two different mean scores indicated that the boys performed better than the girls. The t-value of 11.54 was significant at the 0.05 level, ($P < 0.05$). It could be said, therefore, that the use of pictorial simulations in teaching pupils Social Studies produced a strong effect on gender. Therefore, the hypothesis that there is no significant difference between the performance of boys and girls in the concept of “culture and identity” using pictorial simulations is, rejected

Discussion of Results

The result of the analysis revealed that the experimental group taught using pictorial simulations (with a mean scores of 76.40) performed significantly better than the control group ($x = 39.66$) taught without pictorial simulations (based on the same number of observation, $N = 100$). This showed that the instructional strategy was effective for the understanding of the Social Studies concepts. Consequently, the research hypothesis that there is no significant difference between the two groups was not supported. The null hypothesis was rejected. There is, therefore, a significant difference in the performance of experimental and control groups. This finding is supported by reports of the following researchers in education: (Abimbola, 1986; Erickson, 1994; Hewson, 1986; Nopak, 1987; and Aworanti, 1996). They reported that interaction between individual experience and new information brings about conceptual change. The individual experience comes from the interaction between the pupils and the instructional aids used for instruction. Hypothesis seeks to determine whether performance of boys and girls would differ when taught using pictorial simulations. To investigate possible post - experimental differences on the effect of pictorial simulations, which could be attributed to gender differences, a t-Test was applied on the gender data. Table 4.3 showed the mean, standard deviation and t-value result for boys and girls taught with pictorial simulations. The t-Test result ($t = 11.54$, $P < 0.05$) revealed that there was significant difference in the performance of boys and girls taught social studies concept "culture and identity" using pictorial simulations. The mean score for boys and girls were 84.72 and 68.70 respectively. Judging from the mean scores, the result showed that boys did better than girls, and boys seemed to have benefited more from the use of pictorial simulations than girls. This is an indication that the application of pictorial simulations in teaching Social Studies concepts enabled the pupils especially boys to understand the concept of "culture and identity". The significant performance of boys could be attributed to their ability to grasp the concepts easily, interpreted and understand the concepts through the use of pictorial simulations. Girls, on the other hand were mostly confirmed with domestic activities which give them little or no time in interact effectively and engage in studies, like the boys.

By their nature, girls are generally quiet with or without exposure, especially in this part of country (North). This finding is supported by Obi (1984), that, "one of the factors which reduced women's participation in formal education in the formal education in the past was prejudices against girls' education where the training of sons and not daughters in education take precedence".

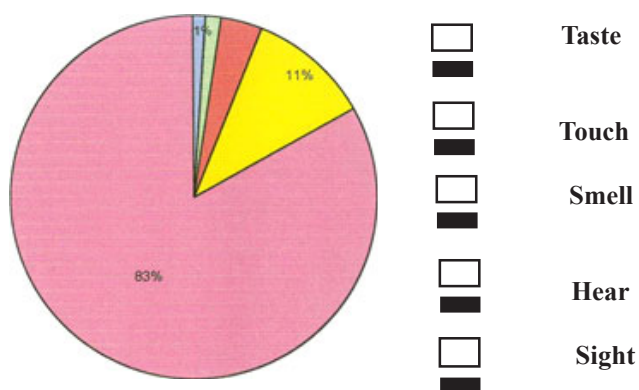
The hypothesis that there is no significant difference between the performance of boys and girls taught 'culture and identity' using pictorial simulations was, therefore, rejected. Hence, there is significant difference in the performance of boys and girls taught 'culture and identity' using pictorial simulations.

Conclusion

It has been discovered from this study that the use and application of pictorial simulations during teaching of Social Studies go a long way to improve the performance of pupils. Blair Jones and Simpson (1968), Jennifer Davis Bowman (2018) in their findings on how we learn state that “one percent is through taste, one and a half percent through touch, three and half percent through smell, eleven percent through learning and eighty three percent through sight’.

This shows that children learn effectively through what they see. The pie chart below shows the level of learning with use of the five senses as indicated by Blair and Simpson (1968), Jennifer Davis Bowman (2018). It also shows that learning attains its highest level with sight.

Pie chart-showing level of learning with the use of five senses.



Key

Taste - 1%; Touch-1.5%; Smell- 3.5%;
Hear - 11%; Sight - 83%

- I. The analyzed result contained in the research work proved that pictorial simulations used for teaching Social Studies concept improved the performance of the pupils greatly. Hence, the experimental group taught ‘culture and identity’ using pictures scored much higher than the control group taught the same concept without pictures.
- II. The study revealed that pictures have positive effect on the learning of Social Studies in primary school. One can, therefore, conclude that the use of pictorial simulations in teaching Social Studies has a great positive effect on learning.
- III. Teachers should be compelled to see the usefulness and effectiveness of pictorial simulations in teaching and should be compelled to use them in classroom instruction.

Recommendations

The following recommendations are based on the findings of this research.

- I. Teachers should use pictorial simulations in teaching pupils so that learning can be effective, easier and understandable to them;
- II. To promote the effective learning of the subject, the Niger State Education Authorities and Niger State Primary Education Board should as a matter of expediency, fund, organize series of workshops and seminars on the effective use of pictorial simulations for teachers of Social Studies in primary schools;
- III. To ensure the success of the Universal Basic Education (UBE) program, primary school teachers should be provided with adequate incentives to spur them to work assiduously and diligently. Put simply, the welfare of the teachers of Primary school across the country should be adequately improved upon to ensure their efficient and effective performance.

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