Effects of Multimedia Instructional Strategy and Traditional Instructional Strategy on Primary School Pupils' Social Studies in Akwa Ibom State

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ABSTRACT

The study investigated the effects of multimedia instructional strategy and traditional instructional strategy on primary school pupils' social studies in Akwa Ibom State. The researcher asked two research questions and formulated two hypotheses to guide the study. The study adopted quasi-experimental research design. The area of this study is Akwa Ibom State of Nigeria. Sample size of 80 sampled from a population of 45,996 primary two pupils in Akwa Ibom State public education system using purposive and simple random sampling techniques were used to sample two primary schools. A researcher-made Social Studies Achievement Test (SSAT) for pre-treatment and post-treatment tests was used for data collection. Reliability coefficients of 0.89 and 0.79 were obtained for SSAT for Pre-treatment and SSAT for Post-treatment respectively. To answer the research questions, the researcher used mean and standard deviation, while the hypotheses were tested using ANCOVA F-ratio. The major findings of the study are: pupils taught using multimedia instructional strategy (MIS) performed better in the Researcher-Made Social Studies Achievement Test (SSAT) than those taught using traditional instructional method; gender had no significant influence on the Social Studies achievement of pupils as measured by their mean score in the Social Studies achievement test (SSAT). Based on the findings, one of the recommendations was that teachers of Social Studies should always adopt multimedia instructional strategy for teaching their pupils due to the fact that the strategy is able to improve pupils' achievement in Social Studies and this will enable the pupils to cater for themselves in their classrooms and hence improve their learning outcomes.

KEYWORDS: Researcher-Made, Social Studies Test, multimedia instructional strategy, traditional instructional strategy, post-treatment test, male and female pupils, Akwa Ibom State.

INTRODUCTION

Primary education is a major component of education in the Universal Basic Education (UBE) programme in Nigeria. The primary goal is to achieve universal access to and quality numeracy, as well as the ability to communicate in children's permanent literacy. According to Cooking (2008), to ensure effective achievement of those core objectives, multimedia should be encouraged in teaching and learning, especially in the teaching and learning of Social Studies. In this modern age of advanced technology, the success of any educational enterprise can be measured not only in terms of how much instruction is given by the teacher, but also in terms of the technologies and media employed to ensure maximum cognitive development or advancement of learners (Orstein and Levis, 2006). Multimedia aids in education could be defined as the combination of various electronic and technological devices employed by the teacher and learner to enhance the interest, acquisition, and retention of knowledge. These include a combination of print media like newspapers, magazines, journals, and books and electronic media like television, radio, slides, CD-Rom, projectors, DVDs, and interactive media like cell phones and the internet.

Primary school is the formative stage of an individual. At this stage, audio and visual impressions made on a child in the process of teaching and learning have a long-lasting effect on the educational development of the child. Children are curious and inquisitive about their environment at this stage. They are observant, persistent, and enjoy entertaining learning experiences and would want to make sense of the natural world. The teaching of Social Studies starts from nursery through primary, secondary and tertiary institutions and is the basis for such courses as Social Studies, Sociology, Political Science, Geography, History, Religion, etc. Social Studies is meant to expose learners to nature (facts, principles, and concepts of problem-solving), processes, and attitudes, and then equip them with skills (Mezieobi, 2012; Nkore, 2016). Learners expect that the materials and method of instruction should be easily transferable to the real world. Thus, the task of the teacher includes, among others, providing the materials and experiences to aid learning and meet the learner's expectations (Dike, 2004).

At this point, it becomes pertinent to find out how the application of multimedia affects the performance of pupils in Social Studies. Primary school teachers are expected to select and use appropriate instructional media during lesson presentation (Taylor, 2009). The researcher, through careful attention, observed the poor academic performance of pupils, especially in Social Studies. The researcher reasoned that this poor performance could be a result of the methods of teaching. Social Studies, being a social science subject, requires teaching using demonstration and using instructional materials that the pupils can observe and try their hands on. Could the use of multimedia enhance pupils' achievement in social studies in primary schools?

Objective of the study

The objectives of the study are to ascertain the:

1. Mean achievement scores in a Researcher-Made Social Studies Test (RMBST) of pupils taught using the multimedia instructional strategy (MMIS) and the Traditional Instructional strategy (TIS) in the post-treatment test; and
2. Mean achievement scores of male and female pupils who were taught Social Studies using the traditional Instructional Strategy (TIS) and Multimedia Instructional Strategy (MMIS) in the post-treatment test.

Research Questions

The following research questions guided the study:

1. What are the mean achievement scores in a Researcher-Made Social Studies Test (RMBST) of pupils taught using the multimedia instructional strategy (MMIS) and the Traditional Instructional strategy (TIS) in the post-treatment test?

2. What are the achievement scores of male and female pupils who were taught Social Studies using the traditional Instructional Strategy (TIS) and Multimedia Instructional Strategy (MMIS) in the post-treatment test?

Hypotheses

The following hypotheses were tested at 0.05 level of significance:

1. The mean achievement scores in a Researcher-Made Social Studies Test (RMBST) of pupils taught using the multimedia instructional strategy (MMIS) and the Traditional Instructional strategy (TIS) in the post-treatment test do not differ significantly.

2. The achievement scores of male and female pupils who were taught Social Studies using the traditional Instructional Strategy (TIS) and Multimedia Instructional Strategy (MMIS) in the post-treatment test do not differ significantly.

METHOD

The study adopted a quasi-experimental research design. The design involves intact groups, pre-test, treatments, post-test, and non-randomization. The area of this study is Akwa Ibom State in Nigeria. The population of the study is 45,996 basic two pupils in the Akwa Ibom State public education system. Purposive and simple random sampling techniques were used to sample two basic schools in the area of the study, which led to a sample size of 80 pupils. The sample size comprises 40 pupils for each of the instructional strategy. For the pupils in the Multi-media instructional strategy group, 18 were females and 22 were males. Similarly, for the pupils in the traditional instructional strategy, 19 were females, while 21 were males. The instruments used for data collection were the researcher-made Social Studies Achievement Test (SSAT) for pre-treatment and post-treatment tests. The SSAT for pre-treatment and post-treatment tests were given to three experienced Social Studies teachers in a Basic School and two specialists in educational measurement and evaluation for content and face validation. The internal consistency for each of the instruments was computed using the Kuder-Richardson formula twenty (KR20). Internal consistency coefficients of 0.89 and 0.79 were obtained for SSAT for Pre-treatment and SSAT for Post-treatment, respectively. The research questions were answered using mean and standard deviation, while the hypotheses were tested using the ANCOVA F-ratio.

Experimental Procedure

The following procedures will be adopted in the administration of the instruments:

(a) Pre-Test Session

Before the treatment, the pupils were given a pre-test. The test was administered by the regular Social Studies teachers in the sampled schools who have undergone training. The scripts were marked by the researcher. The pre-test was used to:

i. Determine the pupils initial knowledge of the subject-matter they would learn later;

ii. Determine the comparability of the two groups with respect to their achievement in the pre-test scores.

(b) Treatment Session

The main treatment for the study was the teaching of the topics to Upper Basic pupils in the sampled schools, through the use of the Multi-media instructional strategy and the traditional instructional strategy. The pupils in group one were taught using multi-media instructional strategy, while those in the group two were taught using traditional instructional strategy. The teaching lasted for eight weeks. The teaching of both groups was done during the normal school Social Studies periods, using the lesson notes prepared by the researcher. During the period of the experiment, the researcher paid regular visits to the sampled SSAT to ensure that the participating teachers carried our instructions strictly as contained in lesson notes.

(c) Post Test Session

After the treatment, the SSAT for Post-treatment test was administered to the pupils in the two groups. The scripts were marked by the researcher and the pupils' score were recorded.

(d) The Retention Test

Two weeks after the post treatment test, the retention test was administered using the same SSAT for post-treatment. The scores of the pupils were collected and analyzed. The research questions were answered using mean and standard deviation, while the hypotheses were tested using ANCOVA F-ratio at 0.05 level of significance.

RESULTS

Research Question One: What are the mean achievement scores in a Researcher-Made Social Studies Test (RMBST) of pupils taught using the multimedia instructional strategy (MMIS) and the Traditional Instructional strategy (TIS) in the post-treatment test?

Table 1: Mean and Standard Deviation Scores of Pupils exposed to MMIS and TIS Groups in the Pre-treatment and Post-Treatment Tests.

		Pre-treatment		Post-treatment	
Groups	**n**	**X**	**S**	**X**	**S**
MMIS	40	15.85	2.91	31.15	5.74
TIS	40	15.88	3.02	16.15	2.98

Table 1 shows that the mean scores of the pupils exposed to the multi-media instructional strategy, MMIS and traditional instructional strategy, TIS in the pre-treatment test are 15.85 and 15.88 respectively. Similarly, their respective standard deviations are 2.91 and 3.02. Also, the mean scores of the pupils exposed to the MMIS and TIS in the post-treatment test

are 31.15 and 16.15 respectively. Their respective standard deviations are 5.74 and 2.98. The mean score of the pupils in the MMIS group is higher than the mean score of the pupils in the TIS group, which shows that the pupils in the MMIS group performed better than the pupils in the TIS group.

Hypothesis One: The mean achievement scores in a Researcher-Made Social Studies Test (RMBST) of pupils taught using the multimedia instructional strategy (MMIS) and the Traditional Instructional strategy (TIS) in the post-treatment test do not differ significantly.

Table 2: Summary ANCOVA F-ratio Table for Testing Hypothesis One
Tests of between-Subjects Effects

Dependent variable: Post-test

Source	Type III sum of Squares	Df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	4571.019[a]	4	1142.755	54.899	.000	.745
Intercept	852.012	1	852.012	40.931	.000	.353
Pre-test	68.337	1	68.337	3.283	.074	.042
Treatment	4487.016	1	4487.016	215.559	.000	.742
Gender	.105	1	.105	.005	.944	.000
Treatment* Gender	.850	1	.850	.041	.840	.001
Error	1561.181	75	20.816			
Total	50878.000	80				
Corrected Total	6132.200	79				

a. R Squared = .745 (Adjusted R Squared = .732)
b. Critical f-value = 4.00

Presented in Table 2 is the ANVOCA F-ratio for test hypothesis one. From the table, the calculated F-ratio is 215.559, the p-value is 0.000, while the tabulated F-ratio is 4.00. Since the calculated F-ratio is greater than the tabulated F-value and the p-value is less than the alpha level of 0.05 the null hypothesis one is rejected. Hence, the mean achievement scores in a Researcher-Made Social Studies Test (RMSSAT) of pupils taught using the multimedia instructional strategy (MMIS) and the Traditional Instructional strategy (TIS) in the post-treatment test differ significantly. This shows that the treatment (MMIS) has significant effect on the pupils' achievement in Social Studies.

Research Question Two: What are the achievement scores of male and female pupils who were taught Social Studies using the traditional Instructional Strategy (TIS) and Multimedia Instructional Strategy (MMIS) in the post-treatment test?

Table 3: Mean and Standard Deviation Scores of Pupils exposed to MMIS and TIS Groups in the Pre-treatment and Post-treatment Tests.

		Male		Female	
Group	**n**	**X**	**S**	**N**	**X**	**S**
MMIS	22	15.85	5.71	18	31.39	5.93
TIS	21	16.29	2.70	19	16.00	3.33

In table 3 the mean scores of the male pupils exposed to MMIS and TIS in the pre-treatment test are 30.95 and 16.29 respectively. Similarly, their respective standard deviations are 2.70 and 3.33. Similarly, the mean scores of the female pupils exposed to the MMIS and TIS in the post-treatment test are 31.39 and 16.00 respectively. Their respective standard deviations are 5.93 and 3.33. The mean score of the male and female pupils in the MMIS group is higher than the mean score of the male and female pupils in the TIS group, which shows that the male and female pupils in the MMIS group performed better than the male and female pupils in the TIS group.

Also, the mean score of female pupils in MMIS group is slightly higher than that of male pupils in the same group. The female pupils in MMIS seem to have performed better than the male pupils in the same group. Conversely, the mean score of male pupils in the TIS group is slightly higher than that of female pupils in the same group. In the TIS group the male pupils seem have performed better than their female counterparts.

Hypothesis Two: The achievement scores of male and female pupils who were taught Social Studies using the traditional Instructional Strategy (TIS) and Multimedia Instructional Strategy (MMIS) in the post-treatment test do not differ significantly

Table 4: Summary ANCOVA F-ratio Table for testing Hypothesis Two

Ms	***df*$_1$**	***df2***	***f*$_{Cal}$**	***p***	***f*$_{Crit}$**	***n*^2_p**	***Decision***
0.105	1	75	0.041	0.840	4.00	0.001	Ho$_1$ is accepted

Results Extracted from table 2

The results in table 4 show that that the calculated F-ratio is 0.041, the p-value is 0.840, while the tabulated F-ratio is 4.00. Since the calculated F-ration is less than the tabulated F-ratio and the p-value is greater than the alpha level of 0.05 the null hypothesis two is accepted. Hence, the achievement scores of male and female pupils who were taught Social Studies using the traditional Instructional Strategy (TIS) and Multimedia Instructional Strategy (MMIS) in the post-treatment test do not differ significantly. This shows that pupils' gender had no significant effect on their achievement in Social Studies.

DISCUSSION

Findings from the study reveal that a difference exists in the performance of pupils taught with multimedia and traditional methods. Pupils performed better in the Researcher-Made Social Studies Achievement Test (SSAT) using multimedia instructional strategy than traditional instructional method. Since the mean scores of pupils taught with MMIS improved significantly, it shows that the instructional strategy improved pupils' achievement scores in Social Studies more than TIS. The finding shows that the use of multimedia instructional strategies has positive effects on pupils' academic performance. Since the multimedia instructional method has been found to enhance pupils' performance in Social Studies more

than the traditional strategy, it becomes clear that the balance should be made between the two methods of teaching when planning learning experiences in the school. This could be attributed to the fact that multimedia instructional method is child-centred than the traditional strategy. This finding corroborates with findings of Hartley (2007), Ahmed (2004), Mayer (2002), and Morris (2004), who reported that use of learner participatory instructional strategies (such as audio-visuals like VCD and Television were used to synchronize lesson presentation) enhances literacy skills in reading and aids performance of learners in both internal and external examinations effectively.

The findings of this study revealed that the mean achievement scores of male and female pupils taught using the multimedia instructional strategy MMIS and traditional instructional strategy TIS in the post-treatment test did not differ significantly. The result shows that gender had no significant influence on the social studies achievement of pupils as measured by their mean score on the Social Studies Achievement Test (SSAT). The treatment group that was exposed to MMIS did not have a significantly different gender mean score on the SSAT. The result of this study, therefore, indicates that male and female pupils benefited equally from the treatment. The fact that the mean difference between male and female pupils was not significant shows that gender was not a factor in the social studies achievement of pupils exposed to MMIS. This is contrary to the findings of Adeosun (2002), who found that girls have better achievement than boys in his research carried out on the effect of multi-media packages on pupils' achievement and retention in Social Studies.

EDUCATIONAL IMPLICATIONS OF THE STUDY

The fact that instructional strategy has a significant effect on pupils' interests implies that teachers must be well familiar with the various teaching methods so as to be able to adopt the most appropriate ones in any given situation. The teachers should be able to go beyond the traditional approach to social studies learning in stimulating and sustaining the learners' interest in the subject. That is to say, teachers create opportunities in the teaching-learning process where the learner will have to acquire not only knowledge but skills and attitudes as well. Finally, the findings of this study have implications for policymakers such as the Ministry of Education and the various institutions involved in the training of teachers with regards to the need for enhanced pre-service and in-service training programmes for teachers.

For the teachers, the findings of this study provide useful feedback as regards the efficiency of the multimedia instructional strategy over traditional instructional strategy, which will allow the teachers to use the MM instructional strategy as a basis for planning their instruction. Since the MM instructional strategy is effective in enhancing pupils' achievement in social studies topics, primary school teachers should consider using it as a subtitle to the traditional format in teaching Social Studies.

The findings of the study concerning the mean achievement scores of male and female pupils in the multimedia instructional strategy group suggest that MMIS can be used to improve pupils' achievement in Social Studies regardless of their gender. Hence, MMIS can be used in schools to teach male and female pupils about social studies. This finding also implies that both male and female pupils have equal chances of having their social studies achievement scores improved by MMIS.

CONCLUSION

The researcher, therefore, concludes that the multimedia instructional strategy (MMIS) is an effective teaching strategy for teaching Social Studies in Upper Basic Schools. Hence, the instructional strategy could be adopted by Social Studies teachers.

RECOMMENDATIONS

Based on the findings and implications of this study, the following recommendations were made:

1. Teachers of Social Studies should always adopt a multimedia instructional strategy for teaching their pupils. The strategy is able to improve pupils' achievement in social studies. This will enable the pupils to cater for themselves in their classrooms and hence improve their learning outcomes.

2. Pupils should always be allowed to participate actively and interact freely with the teachers as this will improve their academic achievement in their subjects.

3. Short-time training, workshops, and seminars should be organized by ministries of education and related government agencies for the purpose of training teachers on how to make use of MMIS in the teaching of Social Studies and other subjects effectively.

4. Teacher training institutions, such as colleges of education and universities that offer Social Studies education courses, should adopt MMIS as a teaching strategy for their students since it improves academic achievement.

5. Female as well as male pupils benefited equally when taught Social Studies using MMIS. The teaching strategy should be used in teaching the pupils Social Studies irrespective of their gender.

REFERENCES

Adeosun, O. V. (2002) *Relative effects of three multimedia packages on Students' achievement and retention in Social Studies*. Unpublished Ph.D. Thesis, University of Ado-Ekiti, Ado-Ekiti.

Ahmad, A. (2004). Developing a result-oriented reading habit. *Journal of Literary and Reading in Nigeria*, 10(1),285-291.

Bransford, J., Brown, A. L., & Cocking, R. R. (2008). *Mind and brain*. In the Jossey-Bass reading on the brain and learning. San Francisco: Wiley.

Dike, H. I. (2008). *A textbook of Educational Technology*. Port Harcourt: University of Port Harcourt.

Elliott, S. N., Kratochwill, T. R., Cook, J. L., & Travers, J. F. (2002). *Educational Psychology*: Effective Teaching and Effective Learning, (3rd ed). New York: McGraw Hill College.

Hartley, R. E. (2007). Teaching, learning and new technology: A review for Teachers. *British Journal of Educational Technology*, 38(1):42-62.

Mayer, R. E. (2002). *Multimedia Learning*. Cambridge, U.K: Cambridge University Press.

Mezieobi, K. A. & Meziobi, K. C. (2012). A handbook of Social Studies competence. Owerri: Priscilla Omama Publishers.

Morris, F. C., (2004). *Effective Teaching*. A manual for Engineering Instructors. New York: McGraw Book Company, p.17-18.

Nkire, F. O. (2016). Re-defining Social Studies for sustainable future: a handbook for stakeholders. Uturu: Gee/Jay Reprographics.

Orstein, A. C. & Levine, D. U. (2006). *Foundation of education* (19th edition). New York: Houghton Miffin company. Retrieved from: http://www.madscience.org/location/ndy/meetingapressingneeds.apx.

Taylor, W. D. (2009). *Teachers and Materials*. The Selection Process in M.A. Gambre (ed.). Secondary School Video. Bloomington: Agency for Instructional Television.