

RELATIVE EFFECTS OF TWO TYPES OF EDUCATIONAL TELEVISION ON JUNIOR SECONDARY SCHOOL STUDENTS' ACHIEVEMENT AND RETENTION IN SOCIAL STUDIES

By

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Abstract: *This study investigated the effects of educational television and video tape-mediated instruction on secondary schools students' achievement and retention in social studies .The purpose was to determine whether educational television and videotape instruction could be recommended as effective for teaching and learning of social studies in secondary schools. and teachers which has posed problems for them. The study employed the quasi-experimental pre-test and post-test control group design. Three groups were formed into treatment and control groups and they responded to pre-test, post-test and retention test administered on them. The sample consisted of 200 Junior Secondary School(JSS(2 students randomly selected from four schools in Chanchaga Local Government of Niger State. Fifty (50) students of intact class were assigned to each of the experimental and control groups. The research materials used for the study included educational television and video-mediated instructional packages. The research instrument used for the study was the Social Studies Achievement Test which was developed by the researcher and whose reliability was determined using the test-retest method. Using the Pearson product moment correlation analysis, a reliability coefficient of 0.82 was obtained and this was considered adequate for the study. The instrument was administered on the students as pre-test, post-test and retention test. Data analysis was done using Analysis of co-variance. Post-hoc analysis was done where necessary. The data generated were subjected to analysis to test acceptance or rejection of the ten stated null hypotheses at 0.05 level of significance. The result showed that eight of the ten null hypotheses were rejected at $P < 0.05$ level of significance. This shows that both educational television and videotape mediated instruction were more effective in learning of Social Studies and had great improvement on students' performance. Therefore it is recommended that teachers of Social Studies should make use of the tested packages to make the teaching of the subject more effective. Also, it is recommended that government should make instructional media materials readily available to schools for conducive learning atmosphere.*

Keywords: Educational Television, Achievement and Retention, Social Studies

BACKGROUND TO THE STUDY

There are two major approaches to using media and technology in schools. First, students learn from media and technology and they can learn with media and technology. Learning from media and technology is often referred to in terms such as instructional television computer based instruction, or integrated learning system. According to Joneses and Reeves (1996), learning with technology is referred to in terms such as cognitive tools and constructivist learning environment. Regardless of the approach, media and technology have been introduced into schools because it is believed that they can have positive effects on teaching and learning processes.

Looking therefore at the over increasing population of Nigeria as a developing country faced with the alarming increase of child birth and the explosive population increase in schools, teaching and learning have been a challenge to the development of educational curriculum and instruction and in addition, inadequate new instructional technologically based materials and the shortage of qualified

manpower, scattered population, inadequate and overtaxed administrative structure and more or less the resistance to change to the new technology strategies on the part of both the administrator and teacher which pose some challenges to them.

Apart from the problems of knowledge explosions brought about by the rate at which certain knowledge becomes outdated and the technical process will advance. In this research therefore, to meet the challenges of time, traditional methods have to be improved so as to increase their efficiency and it is essential also that new teaching strategies to be adopted. It is very necessary that this pace be kept on education with the increase in the population to be educated, but that also schools must be taught with the improved strategy with the requirement upon the new strategies in the teaching and learning situation. This therefore brought the research on the relative effectiveness of two types of educational television in students' achievement and retention in social studies. This research used the designed social studies achievement package to teach a large class in the social studies lessons i.e. the Closed Circuit Television Education package. This research is advising the curriculum planners (developers) to take into account the effect which this medium will bring to educational circle. These desired changes that is expected will bring about certain desired changes in students which we believed will be adhered to by students. Alabi (2002) opined that curriculum is a continuous activity that must consider all the elements of the curriculum. The changes in students cannot be realized unless there are interaction planned and controlled activities between the teacher, students, equipment, materials and all the environment in which these activities takes place. As opined by Alabi (2002) when teachers and students interact there will be exchange of information. Thus communication is very vital and a major tool that could be employed to accomplish the intentions of the curriculum.

Onasanya and Adegbija (2007) emphasized on the need for massive use of instructional media in the classroom, but one big question is that, are these instructional materials available in schools? As important as they are, it has been widely reported by a growing body of researchers that they are either not available or inadequately provided in most Nigerian schools. Dike (1999), Mohamemd (1997), Ezeudu (2000), Alabi (2002), Adelakin (2003), Thomas (2004) and Gana (2006) all have asserted to their opinion. Based on the foregoing, Adebimpe (1997) warned that teachers should use the absence or inadequacy of instructional media as an excuse to resort to poor teaching and learning, instead they should resort to improvisation as an alternative approach towards keeping social studies teaching and learning afloat and meaningful during such a difficult time. Araromi (1987) also cautioned that improvised instructional materials must necessarily serve the purpose for which it is intended. It should not just be provision of a piece of media as a substitute of what is not available. However, Umeodugu (2000) emphasized that for effective instructional processes, emphasis should be more on those media materials that appeal to more than one sense of perception. This remarks is based on the fact that learning experiences, which evoke the involvement for as many sense organs as possible to enable the teacher to convey meaningful information to the learners and stimulate students to receive and process all the necessary information for the development of cognitive, effective and psychomotor skills; this is what has drawn attention to this research.

Media effects on learning outcome are common in the field of Educational Technology. Example of such studies/research are those of Okobi (1994), Okoro and Etukudo (2001), Alabi (2002), Otegbayo (2005) and Kutigi (2006), who mentioned the effects of instructional media and material.

STATEMENT OF THE PROBLEM

The foundation for the use of two types of educational television is brought out from the problems faced by teachers of social studies in their teaching and marking the students' notes and

test/examination scripts. The instructional processes inherent in the educational media approach to using media and technology in schools can be reduced to a series of simple steps as follows.

- Exposing students to message encoded in media and delivered by technology.
- Assuming that students perceive and encode this message.
- Requiring a response to indicate that the messages have been received.
- Provide feedback as to the adequacy of the response.

PURPOSE OF THE STUDY

The purpose of this study is to develop sets of social studies Achievement Test packages on students' achievement and retention in social studies.

OBJECTIVES OF THE STUDY

- To develop packages for teaching and learning for students of social studies using closed circuit television package.
- To investigate the relative effects of developed package with television and video recorded package programme for junior secondary schools.
- To find the relative effects of the package on the following variables (a) Gender (b) Scoring ability levels i.e. high, low and medium levels.

THEORETICAL FRAMEWORK

The intrinsic value of instructional material has been recognized by philosophers, psychologists, instructional designers, materials developers and researchers (Hoban, Hoban and Zissman, 1937; Bruner, 1966. The Roman poet quoted by Goldstein, 1973). What is entrusted to the fickle ears make less impression on the mind than things which are actually presented to the eye as which the sense stoves up for himself (p. 24). In Educational Technology, the abstract concrete concept has become a major theoretical framework in the first half of the 20th century through the works of Hoban, Honan and Zissman (1937); Dale (1946) and Bruner (1965) as shown in Fig. 1.

Constructivist learning environment encompass many different applications of media and technology in educations for the cognitive scientists teaching theories, instructional designers and teachers involved in creating constructivist learning environments, learning refers to the development of mental dates and abilities of all types including conceptual knowledge, technical skills, automatic rules mental models and problem solving. Forms of higher level outcomes such as motivation, intellectual curiosity and the habits of life long learning that are especially relevant because these are the most challenging types of learning to teach and learn.

Words
Diagrams
Maps
Flat perfumes
Slides
Stereographs
Films
Models
Objects
Total situation

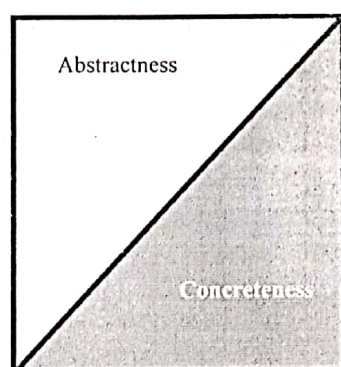


Fig. 1:

Source: Hoban, Hoban and Zissman. *Hierarchy of Teaching Methods* (1937:39)

According to Henebein (2001), to meet the ambitious learning outcomes a constructivist learning environments must adhere to seven goals. These are:

1. Provide learner with experience and knowledge construction process
2. Provide experience in and appreciation for multiple perspectives.
3. Arrange learning in realistic and relevant contexts.
4. Encourage township and voice in the learning process
5. Encourage the use of multiple modes of representation
6. Embed learning in social experience
7. Encourage self awareness of the knowledge construction price.

Many psychologists in their theories explained the role media plays in the curriculum and instructional development. Notable among these theories are the stimulus-response theory, theories of reinforcement, motivation and trait treatment interaction. This research is based on the trait-treatment interaction theory which in itself, could be regarded as an advanced form of the stimulus-response theory which was developed by Skinner and Thorndike. It explains that in any activities there is a situation called stimulus that, which affects the individual (organism) and there is a response. A particular stimulus which therefore becomes connected with its response by the "S-R" bond so that on future occasions a repetitions of the stimulus (S) will produce the response (R). The theory is shown in Fig. 2.

In relation to the educational media, the stimulus therefore is the element of the learner's environment which is specially designed and manipulated as much as possible and presented to the learner like video tapes and photographs. The organism is the learner who perceives the stimulus and produces responses based on his experiences while the response is the action ordination to the learned based on his interaction with the stimulus, his perception and experiences. The trait treatment interaction theory belongs to differential psychology and it could be found in the world of Branch (1970) Berliner and Cohen (1973) Camean (1974), Allen (1975) Hunt (1975) and Heidt (1978).

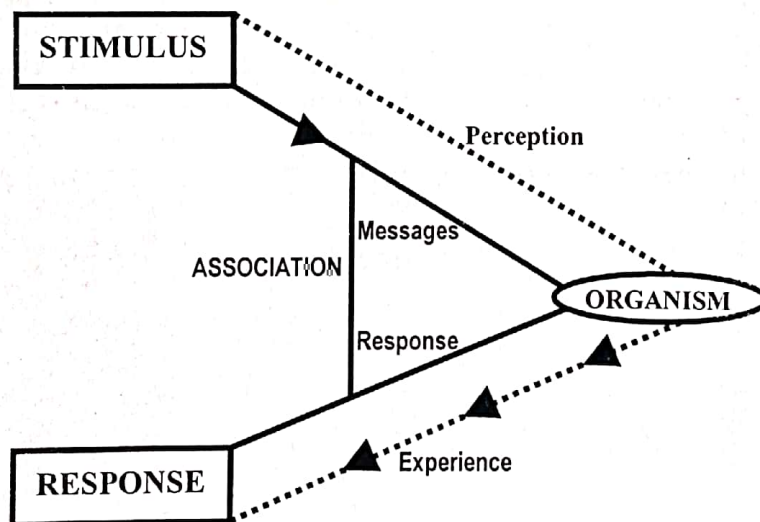


Fig. 2: Model of (S-R) Learning Theory

Source: Abimbade A. (1999).

These psychologists explained that there is a connection between personality traits of the learner on one hand and variables of the instructional situation on the other. Hence, the effect of learning must be instructional treatment and specific characterizes of the individual learners. The theory has the following assumptions:

1. That personality traits and environment factors are interactively related.
2. That behavior in general and learning results in particular can only be explained and understood by taking this inter active relation into consideration.
3. That the behavior of individuals can be deliberately influenced through a manipulation of environmental factors.
4. That different personality trait require different environmental factors, if the same behavior or the same being results are to be achieved.
5. That the personality traits under consideration must at least have a certain degree of stability and generality.
6. That as different cognitive processes is held responsible for the difference learning results, the process features of Learning is emphasized as against the product aspect.

RESEARCH QUESTIONS

The study is intended to answer these research questions.

1. Will there be any difference between the achievement mean scores of the experimental and control groups?
2. Will there be any difference between the retention mean scores of the experimental and control groups?
3. Will there be any difference between pretest mean scores and the achievement mean scores of each of the experimental and control groups?
4. Will there be any difference between the achievement mean scores of both gender in the experimental and control groups?
5. Will there be any difference between the achievement mean scores and the retention mean scores of each of the experimental and control groups?

HYPOTHESES

- Ho₁: There is no significant difference between the achievements mean scores of the experimental and control groups.
- Ho₂: There is no significant difference between the retention mean scores of the experimental and control groups.
- Ho₃: There is no significant difference between the pretest mean score and the achievement mean scores of each of the experimental and control groups.
- Ho₄: There is no significant difference between the achievements mean scores of both gender in the experimental and control groups.
- Ho₅: There is no significant difference between the achievements mean scores and the retention mean scores of each of the experimental and control groups.

SIGNIFICANCE OF THE STUDY

The results of this research could be useful to the government, educational planners and policy makers, social studies teachers and educational technologists. The information generated from this research would aid those who design instructional curriculum to plan a more effective curriculum putting in mind the studio of educational technology to enhance a better teaching and learning situation for the students' achievement and retention of social studies. The research also wants to encourage educational planners to pay more attention in their curriculum design to enhance

the teaching and learning process and also to assist in the designing of befitting educational technology studios.

Finally, the research wants to encourage other educational technology teachers/researchers in the mass production of instructional materials for the smooth teaching and learning in students' achievement and retention.

DELIMITATION OF THE RESEARCH

The scope of this research is to find the relative effect of two types of educational television in junior secondary school students' achievement and retention in social studies. The research being an experimental one will limit itself to all Junior Secondary Schools in Chanchaga Local Government Area of Niger State, Nigeria. This research will focus on Drug abuse among students and its implication on their studies, this being one topic in the Junior Secondary Schools syllabus. The research used the following variables achievement levels, gender and dependent variables as the achievement scores for posttest and retention test.

LITERATURE REVIEW

Some literatures were reviewed on similar research like Wasagu (2000), Alabi (2001), Adeniran (2002) which all opined that importance of instructional materials in the teaching and learning situation. Thorndike and Ivan Paylor states that behaviourism and gestalt theories of learning were found to be the foundation upon which the base of instructional media in the classroom are built, both also pointed out that external environments as well as motivating or stimulating experience of the learner are essential for meaningful and lasting learning while gestalts postulation that learning ones as a result of insight and perception and insight occur in instructional process when as many sense organs as possible and involved.

The works reviewed on gender differences as it affects achievement and retention of students gives diverse opinion. Obe (1989), Ibitioye (1996), Awoniyi (2000), Balogun (2000) and others found out that gender do not have any influence on academic and retention of students.

DATA ANALYSIS AND RESULTS

The results are presented under various items according to the results obtained from the research work the effect of the treatments (main effects) on students' achievement at the posttest Hypothesis One; and the effect of the treatment (main effects) on students' achievement at the retention test – Hypothesis two; the interaction of secondary independent variable (sex and achievement levels) with primary independent variable (treatment 1 – educational television) on students' performance at the posttest – Hypotheses three and four; the interaction of secondary independent variables (sex and achievements levels) with primary independent variable (treatment 2 – closed circuit television) on students' performance at the posttest – Hypotheses five and six; the interaction of secondary independent variables (sex and achievement levels) with primary independent variable (treatment 1 – educational television) on students performance at the retention test.

Table 1: Analysis of covariance of posttest scores of the Treatment Groups Educational Television and Closed Circuit Television and the Control Group using the Pretest as Covariate

Source of Variation	Sum of Squares	df	Mean Square	F	Significance of F
Covariate	597.941	1	597.941	61.917	.000
Main effect (Treatment)	262.239	2	131.119	*13.577	.000
Explained	860.180	3	286.727	29.690	.000
Residual	1805.893	187	9.657		
Total	2666.073	190	14.032		

*Significant at 0.05 alpha level

Table 2: Analysis of covariance of Retention scores of the Treatment Groups Educational Television and Closed Circuit Television and the Control Group using the Pretest as Covariate

Source of Variation	Sum of Squares	df	Mean Square	F	Significance of F
Covariate	575.977	1	575.977	39.372	.003
Main effect (Treatment)	214.657	2	107.328	*7.337	.001
Explained	790.634	3	263.545	18.015	.000
Residual	2735.660	187	14.629		
Total	3526.294	190	18.559		

*Significant at 0.05 alpha level

CONCLUSION

Based on the finding of the study, the following major conclusion can be drawn. The use of Educational Television and Closed Circuit Television produced significant improvement in the posttest and retention test achievement scores of students in social studies. There was substantial difference in the mean scores of students who were taught using Educational Television and Closed Circuit Television and those who were taught using the normal classroom instruction. The difference was in favour of students who were taught with the instrument. Thus it can be deduced that the use of this instrument produced a remarkable improvement on students' posttest and retention test achievement in social studies than the chalk and talk instructional methods. Educational Television can ensure better performance in social studies among junior secondary school students.

RECOMMENDATION

Based on the major findings of this study, the following recommendations are proffered.

1. Teachers of social studies and other secondary school teachers should cultivate the habit of using educational television to enhance the teaching and facilitate students' acquisition of knowledge. Educational Television would allow students the optimistic use of their senses for learning purpose. Instructional materials and media as we all know will enhance the students' emotional feeling that which can arouse their interest in the class through appropriate visual i.e. (motion and non motion) and accompanying narration through their use, students can be motivated better to participate actively in the classroom.

Stakeholders in education should make it as a matter of commitment to provide schools with needed electronic media and instructional material that would assist them in disseminating of instruction.

1. purchase these electronic media accompanying soft wares to motivate secondary school teachers' interest in the use of educational media.
2. National Educational Technology Centre should liaise with various State Resource Centres, educational technology centre or department in tertiary institution and Federal and State television stations to produce relevant educational materials on various subjects taught in the Nigerian secondary schools.

Suggestion for further studies

Based on the experience gathered, this research suggests the increasing the number of schools to include heterogeneous sample i.e. schools in rural and urban areas, the study can be replicated in several States to indicate the influence of socio political environment of schools.

Other topics should be invested in social studies using educational media.

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