

**THE RELATIVE VALUES AND EFFECTIVENESS OF
ANIMATED CARTOON FILM, STATIC CARTOON
PICTURES, AUDIO-TAPE AND VERBAL
LECTURE PRESENTATION IN
INSTRUCTION**

By

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B.A. (INDUSTRIAL DESIGN)**

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DECLARATION

- (1) During the period of conducting this study, the author has not been registered for any other academic award or qualification.
- (2) The material included in this thesis has not been submitted wholly or in part for any academic award or qualification other than for which it is now submitted.
- (3) The programme of advanced study of which this thesis is part has consisted of:
 - Principles and Issues in Graphics
 - Media Research;
 - Research Techniques;
 - Advanced Color and Design; and
 - Advanced Studio practice.

CERTIFICATION


This thesis entitled "The relative Values and effectiveness of animated cartoon film, Static cartoon pictures, Audio tape and Verbal lecture presentation in instruction", by Godwin Ogbu Uka meets the regulations governing the award of the degree of Master of Arts in Industrial Design of Ahmadu Bello University, and is approved for its contribution to knowledge and literacy presentation.



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ABSTRACT

AUTHOR: Uka, Godwin Ogbu

TIT LE: The Be Native Instructional Values and Effectiveness of Animated Cartoon Film, Static Cartoon Pictures, Audio-tape and Verbal Lecture Presentation in Instruction - Master of Arts (Higher Education) April, 1989.

This study investigated the relative instructional values and effectiveness of four modes of instruction namely: Animated cartoon film, Static cartoon pictures, Audiotape and Verbal Lecture presentation in communicating a folklore to children in elementary three in Zaria schools. It was aimed at determining the mode that will impart more knowledge or that will result in more knowledge gain.

To achieve this objective pupils in elementary three in three schools in Zaria were sampled. A research instrument was developed and used in conducting the experiment. The instruments includes, carefully prepared lesson, instructional objectives, objective test, Animated film, Static picture and Audiotape cassette. The statistical design used was the pretest and posttest which was then analysed using one-way analysis of variance (ANOVA) technique and chart.

Based on the analysis of data for this study the following findings are pertinent:

1. All the four modes of instruction used for this study contributed to mastery of the content.
2. In the present circumstances, animated cartoon film proved to be "better than the other modes of instruction in teaching folklore to elementary three pupils.
3. Only minor difference exist among the other three modes of instruction in terms of their instructional potency.

The findings of this study have shown that the graphic artist as a communicator has an important role to play in the educational setting. This is so because the use of animated and static signs to communicate ideas whether in the school setting or for social instruction is the preoccupation of the graphic artist. The general conclusion of this study therefore is that systematic effort should be made to use graphic skills and techniques to introduce more symbolism as against verbalism in our communication system.

DEDICATION

I dedicate this study to Almighty God
and the following people:

1. My late uncle Mr. Enea Okowu Enea
2. My father and Mother Mr. Uka Ogbu Uka
and Mrs. Charity Uka.
3. My late sister Miss Patience Uka and
my Junior brother Master Eberechukwu
Uka.

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CHAPTER ONE

1.0

INTRODUCTION

Audio-visual media has been in use both locally and abroad for instructional purposes. The use of audio-visual media to some extent and in some cases achieved the desired objectives in some of our institutions of learning. In other cases, the result has not been as desired which was due to the fact that teachers have used them as teaching aids, placing emphasis on the "aid" per se. With a shift in emphasis and orientation to the psychology of the teaching-learning process, teaching aids cease to be teaching aid, but learning aids, and audio visual media became integral part of a wholistic system in education.

In any teaching and learning setting or environment the normal or usual way of instruction do produce learning in varying degrees. Systematic approach to instructional material development has long been utilised in the field of business and industry despite the fact that, it is relatively a new concept in traditional education, conventional design and material development reveal the need to device the most effective and economical

strategies that match individual learners and lead to the highest degree of learning within the shortest possible time. Kahl (1966), states that education has the responsibility of seeing that school function in such a way as to produce the greatest amount of desired learning in the shortest possible time at the lowest possible cost both in terms of money and human effort.

Educators are subsequently and actively developing a variety of modern sophisticated instructional materials which are serving as highly effective vehicles for presenting educational messages of instruction beyond the sphere of the conventional lecture format in a way that meets the true goal of education. The traditional teacher-centered lecture mode has dominated the scene and it is only recently that media application is showing some prominence. The need for a systematically designed and developed instructional material, is of utmost importance in an attempt to utilise media technology to improve the learning process. According to Machenzie (1975), a unique feature of the instructional system consist of:

1. Identifying, interpreting and analysing curriculum goals at the beginning of the students programme, and throughout the period during which there is involvement with the instructional programme.
2. Formulating objectives in such a way that they are useful in designing and evaluating instruction.
3. Encourage learners participation by providing a reward system relevant to students needs.
4. Utilising flexible teaching methods such as those employing mediated alternative, like television, audio-tapes, programmed materials, and so on to meet individual needs.
5. Assessing the achievement of curricula and learning objectives through a competence based approach.
6. Accommodating distance between the instructional staff, resources and the learner as a positive element towards the development of learner independence.

Current trends in instructional development place emphasis upon the need to consider alternative means of providing instruction and choosing from these alternatives on the basis of criteria which will maximise learning.

4

Gerlach (1966), Briggs, Camporn, Gagne and May (1966) and Tosti and Ball (1969), are among those who have proposed models for making instructional decisions with particular relevance to media selection. Before any media choice is made, one has to consider the basic principle of media selection, which is the nature of the learning task and the nature of the objectives associated with a unit of instruction. Media at this point can be described as all channels or forms which are borne of the revolution in communications through which information is passed. When such media are used for instructional purposes in conjunction with the teachers, textbooks and the chalkboard they are educational media. In any instructional process, the requirements of objectives, content and procedural strategy determines the media.

It is generally accepted that most media have the capability to diffuse information and knowledge, some media have the capability to show objects in color, motion, symbolic representation, simultaneous pictures and sound.

Davies (1973), states that all media to a varying degree help in:

- (a) Perception.
- (b) Understanding.
- (c) Transfer of training

- (d) Provide reinforcement or knowledge of result.
- (e) Retention.

Media exist in varieties such as locally designed and developed audio-visual materials, manufactured packages, books, other printed materials, sound and silent film, flat pictures and three dimensional moulds and photographs, audio-tapes, slides, overhead transparencies and radio. Educational television, video tape recorders, filmstrip, and projectors, language laboratories and so on. The filmstrips, slides, transparencies and film are referred to as softwares while the main machines that is the projectors are referred to as hardwares. Media can be projected or non-projected. Example of non-projected medias are leaflets, poster, all charts and three dimensional media. They can be divided into five categories. Visual symbols, still pictures, exhibits, contrived and dramatised experience. Projected media are still or motion pictures that are projected through film or television, filmstrip, slides and micro projectors.

The importance of media in general education cannot be over looked. Media is known to increase the rate of learning and at the

same time allow the teacher to use more time on other resourceful activities. Media also encourages involvement of teacher in curriculum design and development; effective lesson planning from objective determination and evaluation. Today, the amount of knowledge as well as the population of students have tremendously increased in our schools. It is therefore necessary to devise new methods of teaching which could be tried to effect maximum realization of the desirable objectives. The experimentation with new models of instruction is very important to educational technology whose main concern is the application of knowledge and techniques as systematically as may be appropriately possible in the learning process, taking into consideration:

- (a) The intellectual level and educational background of the students.
- (b) The students age and practical experience i.e. perceptual level.
- (c) The social and cultural environment.

Each medium has a unique characteristic which should be employed to achieve specific learning objectives. Film may be used when motion is required to convey manipulative task or process. Still pictures may be effective in place of motion

pictures where the motion picture goes too fast or shift scene too quickly to stress important point, slides and filmstrips enable the instructor to increase the time student may view the illustration, to answer their question and make comments. Tape recorder is an asset in the hand of the teacher and also a versatile device for creative teaching. Each medium should be evaluated in terms of the learning objectives for which it is designed. In selecting the most appropriate media or medium for instructing students, one must think of the capabilities of that medium to show objects in motion, objects in color, to provide printed words, spoken words, simultaneous visual and auditory stimuli; to allow for overt learner responses or random access to information. Whatever media that is chosen, must be a suitable instructional medium in instructing or teaching the students.

The aim of visual aid in teaching the students is to clarify, simplify content matter and also assist in maintaining interest. The major function therefore, is to supplement the teachers effort in order to enhance his effectiveness in the classroom. Visual aids are the major means for improving clarity in communication, diversity in methods and forcefulness in appeal.

Audio visual materials provide us with vicarious experience. Most students and teachers cannot travel outside the country but can learn what is happening in other countries through film. Telescopic motion pictures help us to see what a trip to the moon might show us. We cannot see an atom directly by the naked eye but a three dimensional model can present it in a classroom as a memorable construction. Though some of us cannot go to China, we can still learn vicariously about Chinese family by listening to the tape recordings of "the way of mankind". Thus, through the use of words, recording, pictures, posters, television, we can bring the world to the classroom. Furthermore, by the use of film and audio materials the past can come alive.

The importance of instructional media at this point cannot be over emphasised. Freedman and Berg (1961), states that audio visual aids have proved to be very useful in the "effective" domain, as well as in the intellectual domain. First the pleasure which they give to learning encourages favourable attitude towards school, secondly, film have proved particularly effective in arousing emotions, in enabling students to acquire a wide range of identification with other people and their problems and even in changing attitudes. Thirdly,

films, radio and television both in and out of school, have been made the basis for teaching discrimination and good taste through the understanding and appreciation of content, aesthetic values and technical skills.

1.1 The Purpose of the Study

The present study is an experimental research designed to determine the relative effectiveness and values of a selection of communication channels or modes of instruction such as animated cartoon film, static cartoon pictures, audio-tape and verbal lecture presentation. By using the selected channels in teaching a folklore to elementary three pupil who fall between the age range of seven and eight years, an attempt is made to determine their relative effectiveness by comparing the amount of knowledge gained from each channel and from using a combination of channels.

1.2 Research Questions

1. Holding the content and objectives of the instruction constant, which of the selected media (cartoon animated film on television, static cartoon pictures, audio-tape and

verbal lecture presentation) will result in greater knowledge gain?

2. Holding the content and objectives constant, what combination of the selected media will result in the greatest knowledge gain?
3. To what extent do elementary school children in Zaria appreciate animated instructional materials??

1.3 Limitation of the Study

This study was limited to elementary three pupil between the age range of seven to eight in Zaria Schools. This was due to the limited time factor and finance. The second research question was also not conducted.

1.4 Delimitation

This study which is concerned with the relative effectiveness of a selection of communication channels that will be useful in instructing pupils in elementary three in Zaria Schools whose age range fall between seven and eight.

1.5 Definition of Terms

Animation: A method of photographing series of drawings on film so that figures seems to move when the film is projected. (Galfney 1977).

Audio-Visual Aids: Aids designed to help learning by making use of both hearing and sight. (Wittich and Schuller 1973).

Instructional Media: Device or materials which represent a body of information and largely self-supporting rather than supplementary in teaching-learning process. (Bala 1983).

Instructional Technology: Is a systematic way of designing, carrying out and evaluating the total process of learning and teaching in terms of specific objectives based upon research in human and non-human instruction. (Wittich and Schuller 1973).

Motion Pictures: Sometimes called Movie or film is a series of still pictures frames usually 8 mm, 16 mm or 35 mm in size, taken in rapid succession, when projected by a motion picture projector, they

give an illusion of motion (Wittich and Schullar 1973) .

Still Pictures: Are categorise into four types -
Opaque still pictures, slides, film strips and over-head transparencies (Brown, Lewis and Marcleared 1975) .

1.6 Background and Significance of the Study

The present reasearch effort is motivated by the Nigerian educational policy specifically the new adopted educational system (6-3-3-4), which places emphasis on the use of audio visual aids in instruction. Part of the motivation also derived from personal observation and professional concern and recommendations made by other researchers. The major concern of this present investigation is to rind out the relative values and effectiveness of animated cartoon film, still pictures, audio tapes and verbal lecture presentation in instructing elementary school pupil a folklore. Some of the literature reviewed on the relative effectiveness of motion picture fail to give conclusive findings with regard to the superiority of one medium over another. Many studies conducted by McClusky and McClusky (1974), Kale and Grosslight (1955) have found no significant differences in the

effectiveness of two or more media such as film and filmstrip. While other studies conducted by Goodman (1942), and Craig (1956) have demonstrated the superiority of silent motion pictures over sound motion picture. Most of this studies that did not give conclusive evidence fail to define the learning properly.

CHAPTER TWO

2.0 REVIEW OF RELATED LITERATURE

The review of related literature will centre around five major areas of media considered pertinent to this study namely:

1. The need for instructional media
2. The use of media in instruction.
3. Children and instruction/learning
4. Motion and static picture presentation.
5. Auditory and verbal lecture presentation.

2.1 The Need for Instructional Media

The need for instructional materials in our educational system cannot be over emphasized when one considers the problems involved in trying to provide quality education in Nigeria. Also, considering the rate at which our schools are expanding, it is becoming difficult to produce adequate number of teachers to meet the instructional needs large student population in our schools. The Federal Government has intensified its efforts towards media use in addition to the desire to provide quality educators: The use of teaching resources in education has a dual purpose; to improve learning and teaching and to permit teachers and students

to interact as human being in a climate where people control their environment for their best purposes. One of the roles teachers play is that of transmitting information to the learners. In that role the teacher must often talk in order to communicate. However, in order to communicate even better, he should use relevant media such as (chalkboard, slides, filmstrip, bulletin board, animated cartoon film on television, still pictures, demonstration, model and so on). In selecting a particular medium to meet instructional objectives, the availability of either materials or equipment may influence ones decision. In most cases, it is wiser to seek for the most simple mode of communication that will meet programme requirement and fortunately there are many alternatives from which to choose. These include record players, tape recorders, radios, slides and filmstrips, projector and viewer, overhead projectors, motion projectors and viewers, television receiver, video tape recorder, player, teaching machine, computer terminals; print and images reproducers, electronic laboratories, audio/video/access and interaction devices; telephones with or without other media accessories, micro-images

system - micro film, micro-card, micro fishe, coping equipment and duplicators, camera - still and motion equipment for learning.

Medahunsi (1980), states that instructors have learned that teaching requires knowledge of how to produce, select and use appropriate new communication media in order to better explain new subject content that modern development demands. Berg and rreedman (1969), are of the view that Educational Technology and the use of the various media enable the teacher to give the students the opportunity to pursue their own interests at their own rate and can partially alleviate the problem of increasing classroom population. The introduction of instructional aids to classroom has offered todays educators some unique capabilities for meeting the problems of the increasing classroom populations. Berg and Freedman (1969), are also of the view that instructional media can increase learning by helping to arouse and sustain interest, motivate, present information in a variety of ways, and provide the kind of experience which allow for the transfer of knowledge and skill to new task.

Todays children are surrounded by media in a variety of forms, from print in hard and soft

cover to non-print through recording televisions, 8 mm, 16mm movies, filmstrip, static picture displays, microform, video tape, to name only a few. The question at this point is which channel is most effective individually or in combination for teaching children in Nigeria. Erickson (1965), a noted authority and author in the field of audio visual media list six advantages in using instructional media in education:

1. Instructional media provide the teacher with means of extending the horizon of experience. This means that the student is provided with first hand experience even while sitting in the classroom.
2. They provide meaningful source of information.
3. They provide springboards into a variety of learning activities.
4. They assist the teacher in overcoming the physical difficulties of presenting subject matter.
5. They provide the teacher with rich source of student purpose when communicative materials are produced jointly by students and teachers.

6. They provide the teacher with a kit of tools to carry out diagnostic research and remedial work demanded by up-to-date instructional purposes.

2.2 The Use of Media in Instruction

In a comparative study on the administration of visual services in advanced and developing countries sponsored by U.N.E.S.C.O. in 1974, it was found that there were not many audio visual media in use. Fourteen African countries were specifically surveyed including Nigeria and the situation was not better. Brown, Lewis and Hearcleared (1977), state that more incentive approaches are required if one expect to capture and hold student/pupils interest and to increase students learning. They also generalised principles of media selection and use as follows:

1. No one media is best for all purposes.
2. Media use should be consistent with objectives
3. Users must familiarise themselves with content.
4. Media must fit students capabilities and learning styles.
5. Media must be appropriate for mode of instruction.
6. Media can neither be good nor bad, simply because they are either concrete or abstract.

7. Media should be chosen objectively rather than on the basis of personal preference or bias.
8. Physical conditions surrounding uses of media affect significantly the result obtained.

2.3 Children and Instruction/Learning

Children of today are surrounded by media in a variety of forms from print to non-print. The purpose of this study is to determine which medium is more effective in teaching the child. Numerous education foundations and researchers have systematically investigated the problems surrounding children mastery. Most recently published by the Academy for development is their finding related to the reason to read; A report on international symposium on the promotion of Reading Habit (1976). The specifically pointed out that the influence of non-print media on reading depends on how they are used and what is expected of them. Media can be used to motivate children's reading interest. Barber-Smith and Reilly (1977), described how learning disabled students become more involved in social and academic activities through media production.

Another group of researchers Beazles-Roos, Lessica, Gat and Isabel (1983), studied specific impact of radio and television on children's story comprehension, their finding shows that recall of the explicit story content was equivalent across media. Television improve recall of details. Radio was better for inexpensive language where pictures sequencing was augmented by television. Greiner (1955), state that children learn most easily by visual methods, they have an astonishingly long and vivid memory for things they have seen but is not always possible to guard against confusion. Galfney (1977), also states that film has an incredible ability to centre the energies of children, it also enable them share an experience in a group, and as a group. There element of bonding and centering make film a natural educative tool.

2.4 Motion and Static Picture Presentation

A review of some related literature revealed that most research works in this field were conducted abroad but few of such studies were actually conducted in Nigeria, Gagne and Brigg (1974), in their findings they concluded that most instructional function can be performed by most

media, no single medium is likely to have properties that makes it best for all purposes. Film can be effective in teaching factual information over a wide range of subject matter, content, ages, abilities and conditions of uses. Most of the research on related fields fail to explicitly define what was being compared which contributed to the finding of the studies. Visual aids are normally long lasting and have high referability. Groppe (1963), observed that in practise visual aids are normally available for inspection for longer period than their verbal counterparts, allowing for greater response practise. It is one of the mass media that can be used to educate, to propagandize to sway the thoughts and act of us all.

Research findings has established that the use of carefully prepared and relevant visual aids can improve students achievement, there has been no attempt to determine the relative effectiveness of various types of visual illustration among Nigerian pupils.

Comparisons of few studies conducted on motion pictures with equivalent static version shows no difference in learning except when the concept to be learned deals with motion, in which

case the motion version was found to be superior (Silverman, 1958). The same result was obtained in an abstract content by Houser, Houser and Van Mondfrans (1970), in which the task was to associate nonsense syllables with concepts defined by simple geometric shapes. Allen and Weintraub (1968), found an overall superiority for motion pictures as compared with an equivalent still pictures over a range of subject matter, contents and instructional objectives, particularly in instances where the content entailed motion itself. And also where motion perform better to enhance learning has not been fully identified. Adults as well as children generally prefer moving presentation to static presentation. Although Miller (1969), found no overall difference in emotional reaction (as measured by galvanic skin response) to equivalent motion and non-motion presentation.

Motion pictures may either be silent or with sound, color or black and white, animated or life action. They may or may not employ high speed or time lapse photographs, or they may not depict motion at all. Motion pictures are usually regarded as being fixed pace and fixed sequence presentation. Still pictures are available in many

forms. In print or in slides for projection, in black and white and in shades of grey, or in full rich color. Brown, Lewis and Hercleared (1977), state that, abstraction can be made real - by the use of flat pictures to reinforce impression, add new facts, or provide meaning to abstraction. They also state that, flat pictures deal with experimental matter and enlist the viewers own capabilities for collection and recall.

Herdeg (1967) defines sound motion picture as a series of individual pictures that have been photographed optically by a special camera, on a film-strip. The images after re-arrangement to put them in the right order, are on being projected presented to the eye in rapid succession.

Fuglesang (1975), states that animation is an identical means of expression. It can be utilized with the same analytical effect. Animated entertainment films are naturally more direct means of reaching the screen for graphic artist. Herdeg (1967), state that animation has been from the very beginning of film industry, a vital field for experiment with new techniques and ideas as it is the film activities best suited for conveying pure design directly onto the moving film. In

animated entertainment films, concession are made on popularity of story telling, since the prime objective of such works is to entertain and educate children.

Today's animation has not only story appeal and movement in the film but color and design as well. The present-day animated films differ from their predecessors because the present day graphic artist conditions the story development. Cartoon animated films are among television entertainment favourite. Ryan and Schwertz (1950), found that cartoon possess greater simplicity clarity, aesthetic effect, rhythm and Unity than other styles. Harchberg (1972) states that, the potentials of cartoon films does not only lie in its many explored field of dynamics, its rich pictorial possibilities, its close relationship with music and its prospect but also as a form of dramatic and poetic expression and as a film art medium which can be practised more easily than the involved life action media requiring hundred of technical specialists. There are different types of animation techniques that can be employed by the graphic artist. Example cell, cut out and so on.

Television as an entertainment medium has been with us almost thirty years. Most schools have

started making use of instructional television (ITV) in the classroom. Galfney (1977), states that several studies have consistently shown that when Instructional Television (ITV) is used to supplement and enhance regular, planned instruction, it can greatly expand the learning by student.

Dwyer (1976), was of the view that given a variety of types of educational objectives to be learned, some students will achieve greater success from one method of presentation and others will be more successful with another method of instruction.

2.5 Auditory and Verbal Lecture Presentation

Wulfeck and Zeitlin (1962), McCormik (1964), and Travers (1970), are among those who have discussed the characteristics of visual and auditory channels. Auditory signals are finite in

duration and are relatively very difficult to preserve. In another study, adults who used verbal strategy remembered more than those who drew pictures as they number text passages from Science text book, (Tirre et al 1979).

Lectures are widely used because we are so familiar with the techniques and it is reinforcing to the instructor. Gagne and Berliner (1975), are of the view that retention from lecture work best in disciplines where practitioners agree on the major concepts, principles and skills. McKeachie, Verner and Dickinson (1967), Blight (1972), Costain (1972) have concluded from their review of many studies that lecture method is only suitable when:

1. The basic purpose is to disseminate information.
2. The material is not available elsewhere.
3. The material must be organised and presented in a particular way for a specific group.
4. It is necessary to arouse interest in a subject.
5. The material need to be remembered for only a short time.
6. It is necessary to provide an introduction to an area or directions for learning task to be pursued through some other

teaching method.

The following claims in this literature review are supported by research evidence by Hoban, Finn and Dale (1969), who found that audio visual materials when properly used in teaching situation can accomplish the following:

1. Supply a concrete basis for conceptual thinking and hence reduce meaningless word response of students.
2. Have a high degree of interest for students.
3. They make learning permanent.
4. They offer a reality of experience which stimulates self-activity on the part of pupils.
5. They develop a continuity of thought, this is especially true of motion.
6. They contribute to growth of meaning and hence to vocabulary development.
7. They provide experience not easily obtained through other materials and contribute to the efficiency, depth and variety of learning.

Though, recent studies have shown relative effectiveness of those media or modes of presentation on certain learning task, the review of related literature have not specifically revealed

any study on the relative effectiveness and values of animated cartoon film, static cartoon pictures, audio tape and verbal lecture presentation in instructing children between the age range of seven-eight years, particularly when the learning task involves the comprehension of a folklore. This study is therefore designed to investigate the relative values and effectiveness of animated cartoon film, static cartoon pictures, audio tape and verbal lecture presentation in teaching children a story about the tortoise and the lizard in the Nigerian context.

2.6 Summary

In this review of related literature, there was a brief discussion on five major areas of media considered pertinent to this study, namely: the need for instructional media, the use of media in instruction, children and and instruction/ learning, motion and static pictures, and finally auditory and verbal lecture presentation with a view to finding out whether previous research has actually established which medium is most suitable for teaching Nigerian children traditional folklore. No such medium or media was conclusively established by previous research thus enhancing the credibility of the present study.

CHAPTER THREE

3.0 METHODOLOGY3.1 Procedure for Collection and Treatment of Data

This study was designed to answer the following questions:

1. Holding the content and objective of the instruction constant, which of the selected media (cartoon animated film, static cartoon pictures, audio tape and verbal lecture presentation) will result in greater knowledge gain?
2. Holding the content and objective constant, what combination of the selected media will result in the greatest knowledge gain?
3. To what extent do elementary school children in Zaria appreciate animated instructional materials?

3.2 Population

The target population of this study to which inference will be made, consist of pupils in the age grade of seven and eight years in elementary three in Zaria schools.

3.2.1 Sampling

The sample for this study were drawn from elementary schools in Zaria town. Three schools were randomly selected by quater sampling to ensure that there was no bias arising from socio-economic factors. Selection of subjects to group, and as assignment of groups to treatment were accomplished by random process, involving a table of random numbers to ensure that no element of the population was omitted deliberately. The schools selected are: Ahmadu Bello University Staff School, Zaria Children School and Local Educational Authority School L.E.A. Shika Road Primary School, Samaru. Twenty subjects were randomly selected from elementary three of each school sampled. The subjects were chosen by a process of random number selection which gives member of the population an equal chance of being included in the sample.

3.3 Statistical Design

The statistical design for this study is the pretest and posttest design, to determine the extent of knowledge imparted into the subjects by each medium. The pretest determines the subjects entry behaviour, after which the various groups were exposed to the various treatments.

procedure are developed and test and examination are prepared. This view expressed above suggests that a meaningful assessment instrument should reflect the objectives of the course on which the assessment is based. The instructional objective of this lesson is that after the instruction the subjects should be able to:

1. Identify the animal in the story, that was pulling his load along during his journey.
2. Identify the animal that cut the load that was being pulled along.
3. Identify the animal that was enterprising and lived through honest means.
4. Identify the animal that was and lived through piracy and dishonest means.
5. Describe how the animal carried his load.
6. Identify the animal that was annoyed.
7. Explain why the animal was annoyed.
8. Describe the reaction of the annoyed animal.
9. Identify the animal that went and hid leaving his tail exposed.
10. Describe what the angry animal did when he found the animal that cut his load.

3.4.2 Test Items

Tests are one method of giving students opportunity to show what they know as a result of the instruction. It is therefore true to say that the test X-ray the content of an instruction, bringing out the key issues or fact that deserves more attention. Test are indispensable research instruments when the researcher wants to determine students achievement and to compare it with other variables.

Based on the instructional objectives, the test items were prepared. The test was written and revised several times by the researcher before it was submitted to subject matter experts to examine each items in terms of their appropriateness as well as for the avoidance of ambiguity. Inyang (1987), stated that check is concerned with the determination of the content validity of the items after which the test writer uses the comment of the validators to select appropriate items.

The prepared test items were sent for validation to three experts who teach audio-visual materials to postgraduate diploma and masters degree students in the Department of Library Science. They selected fifteen items multiple

choice questions. The researcher's supervisor helped in the final selection of ten test items needed for the experiment before it was finally sent to a computer analyst for the final validation. Care was taken to ensure that the criterion measure was comprehensive enough as to cover the six levels of knowledge namely, comprehension, application, analysis, synthesis and evaluation. Kissock and Iyortsun (1982), have given examples of criterion measure at each level. A number of authors have also given key words for framing question at each level. Some of them are Gronhund (1981). Ipaye (1982), Kissock and Iyortsun (1982).

Example:

A "knowledge" question asks the people to recall or recognise information or idea with which he has been presented previously. Some words often associated with knowledge and recall questions include: define, select, name, identify, which, what and who. An example of such test items set by the researcher is as follows.

1. Name the animal that was pulling his load along during his journey.
 - (a) The lizard
 - (b) The tortoise
 - (c) The Monkey
 - (d) The dog.

The application of the principle for selecting the question in each domain was strictly adhered to for the purpose of enhancing validity and reliability.

3.5 Procedure

The subjects were randomly assigned to one of these four conditions by a simple random number selection technique: Motion animated cartoon film (M), Still cartoon pictures (S), Audio-tape (A) and Verbal lecture (L). An objective test was developed to measure students knowledge of the content matter of each treatment group. The test items is composed of ten multiple choice questions. All the subjects were tested twice, with the same question. The first was given before the treatment in order to determine how much the subjects already know about the task they were about to perform. The second test was given just after the treatment in order to determine how much they had learned through the various channel presentation. The amount of factual knowledge learned from each channel presentation were revealed by the difference between the "before" and "after" test scores of each treatment group. The relative values and effectiveness of any of the channels or combination of channels was seen

by comparing the gain made by a group against the gain made by another group.

The treatment were as follows:

The motion (M) group were exposed to cartoon animated film without sound but with adequate instruction from the class teacher, narrating the story about the tortoise and the lizard to the pupil in elementary three for ten minutes. After watching the film twice, the children were given the ten multiple choice questions based on the instructional content. The static (S) group were exposed to seventeen cartoon pictures with story-line. And also with instruction from the class teacher, narrating and teaching the same instructional content for ten minutes. After watching the picture for another ten minutes, they were given the same test items to answer. The audio tape (A) group received a cassette audio tape recording, teaching the same story for ten minutes with repeat commentary, then at the lapse of the second ten minutes, ten multiple choice questions were administered. The last group lecture (L) received a verbal lecture based on the same instruction content for ten minutes with a repeat instruction for another ten minutes and finally answered a ten multiple choice questions. The class teachers who participated

in the experiments were drawn from the schools concerned. The presence of classroom teachers of the selected classes were very important in this experiment and they stayed in the classroom and assisted in seeing the experiment through Galfney (1977), pointed out that if the teachers were not involved or do other things like correcting papers during the treatment of the subjects, it diminished the effect of the treatment. He stated that, the children seemed to say to themselves if my teacher does bother with this program, why should I? The subjects were adequately instructed on what to do before the test. Adequate instruction was given to the classroom teachers, which they read to the subjects before the treatment and the test. Before the experiment, the classroom teachers concerned were given instruction on how to administer the test and treatment. An example of a piece of instruction handed over to the teacher, who handled the motion group which he read to them before the treatment was as follows, "the film you are about to watch is a traditional folklore, about the tortoise and lizard. At the lapse of twenty minutes you will be able to tell the story and answer ten multiple choice questions based on the story.

So be attentive". The teachers for the other groups were given the same instruction.

CHAPTER FOUR

4.0 ANALYSIS OF DATA

This chapter is concerned with presentation and analysis of the data as follows:

1. Comparison of the pretest and posttest scores for each of the schools sampled.
2. Comparison of the ratios of pretest to posttest scores for all schools.
3. Comparison of pretest scores, all modes or channels of instruction, across all schools.
4. Comparison of the posttest scores for all modes of instruction.
5. Comparison of modes of instructions, all schools, pretest, all modes or channels.

4.1 Comparison of Results

Comparing the pretest and posttest scores for Zaria children School revealed that the two scores were far apart, the probability that they were from the same statistical population is practically zero. The same result was obtained from Ahmadu Bello University Staff School and Local Education Authority (L.E.A.) Primary School, Samaru. The comparison of pretest Zaria Children School and pretest Ahmadu Bello University Staff

School revealed that these groups were close together; the probability that they were from the same statistical population is close to 90%. Pretest Zaria Children School and pretest L.E.A. School, Samaru are far apart. The pretest comparison of Ahmadu Bello University Staff School with L.E.A. School showed that there were also far apart, although not quite so far, with 3.4% probability of their being from the same statistical population.

Posttest comparison of the three schools revealed that: Zaria Children School compared with Ahmadu Bello University Staff School are far apart. The probability of their being from the same statistical population is almost zero. Zaria Children and L.E.A. Samaru, also revealed a far-apart probability of 1.3%. Ahmadu Bello University Staff School with L.E.A. Samaru are also far-apart, probability of their being from the same statistical population is 0.1%, practically zero.

4.2 Analysis of Variance

Analysis of variance was used to test whether the difference in the scores were statistically different.

School revealed that these groups were close together; the probability that they were from the same statistical population is close to 90%. Pretest Zaria Children School and pretest L.E.A. School, Samaru are far apart. The pretest comparison of Ahmadu Bello University Staff School with L.E.A. School showed that there were also far apart, although not quite so far, with 3.4% probability of their being from the same statistical population.

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4.2 Analysis of Variance

Analysis of variance was used to test whether the difference in the scores were statistically different.

Table 4.2 Comparison of All Modes of Instruction:
Motion, Static, Lecture, Audio
(Posttest Scores)

| Statistics | Motion | Static | Lecture | Audio |
|-----------------------|----------|---------------------|----------|----------|
| Maximum | 100 | 100 | 100 | 90 |
| Minimum | 60 | 40 | 20 | 30 |
| Range | 40 | 60 | 80 | 60 |
| Mean | 76.6687 | 69.3333 | 63.3333 | 60 |
| Variance | 195.2381 | 35 .2381 | 552.3810 | 557.1429 |
| Standard Deviation | 13.9728 | 18.3095 | 23.5028 | 23.6039 |
| Mean Deviation | 12 | 14.0444 | 18.2222 | 21.3333 |
| Medium | 80 | 70 | 60 | 70 |

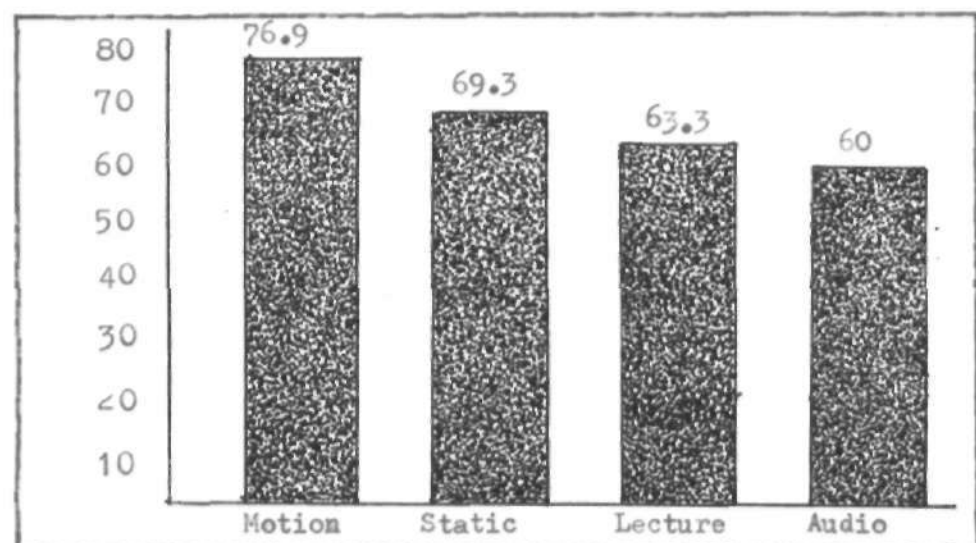
From table 4.2, the descriptive statistics of the comparison of the posttest scores of the four modes of instruction revealed that when Motion group were compared with static group, there were not very close together which shows that students that were exposed to "motion" (animated cartoon film) performed better than students that were exposed to static cartoon pictures with a mean score of 76.7% motion and 69.3% static respectively. Motion compared with lecture indicated a far probability meaning that they are far apart in effect. Motion compared with Audio also indicated that they

were far apart which can also be seen from the bar chart below.

Static group compared with lecture group revealed that students in both groups gained almost equally from the two different modes of instruction with mean scores of 69.3 and 63.3 respectively. Static group compared with Audio group revealed that they were far apart which shows that students that were exposed to static pictures gained more knowledge than those that were exposed to Audio-tape presentation.

Lecture group compared with Audio group revealed that they were not far with mean scores of 63.3 and 60.0 respectively, which indicates that both treatment group gained equally from their various modes of instruction.

Bar Chart Comparison on the Four modes of Instruction: Motion, Static, Lecture, Audio



4.3 Description of Research Findings Pertinent To Each Research Question

For the purpose of describing the research findings, the research questions are restated as follows:

1. Which of the selected media (animated cartoon film on television), static cartoon pictures, Audio tape and verbal lecture presentation will result in greater knowledge gain?
2. What combination of the selected media will result in the greatest knowledge gain?
3. To what extent do elementary schools in Zaria town appreciate animated instruction?

The posttest scores which were analysed according to the analysis of variance techniques (ANOVA) revealed a main effect for all the modes or channels of instruction. The probability level was 13% from an F-ratio of 1.96. The mean scores for the different modes were as follows:

Motion 76.7%, Static 69.3%, Lecture 63.3% and Audio 60%. And also they have mean standard deviation as follows: Motion 14%, Static 18.3%, Lecture 23.5% and Audio 23.6%.

With respect to the first research question it was found that, the motion animated cartoon film group gained more knowledge from the instruction, with a mean score of 76.7%.

Comparison of the pretest and posttest scores of all schools and modes of instruction revealed that the two scores are far apart, the probability that they are from the same statistical population was practically zero. This finding also shows to some extent that the subjects had no prior knowledge about the task they were about to perform before they received the treatment.

Due to limited resources, time and finance, the researcher was unable to test the second research question.

The third research question is intended to find out the extent to which elementary school children in Zaria town appreciate animated instructional materials as an innovation. It should be recalled that the highest mean score was recorded by subjects who were exposed to "Motion" (animated film). Also during the treatment period, it was observed by the researcher in all the schools sampled that children vividly showed their interest in animation film by discussing what they have learn't from the film, and describing the characters in the film. Most of the children openly showed excitement, upon watching the animated film. The facial expressions and gestures also

suggest interest in the animated instruction. Field (1954) was of the same opinion that children are emotionally untrained and show their reaction to emotional stimuli with their whole body.

CHAPTER FIVE

5.0 SUMMARY AND CONCLUSION

The present study sought to discover the relative effectiveness of selection of communication modes or channels of instruction to communicate a folklore to children in elementary three in Zaria schools. The purpose was to determine their relative effectiveness by comparing the amount of knowledge gained from each mode of instruction. Specifically they were designed to answer the following questions:

1. Holding the content and objectives of the instruction constant, which of the selected media, (animated cartoon film on television, static cartoon pictures, Audio tape and verbal lecture presentation) will result in greater knowledge gain?
2. Holding the content and objective constant, what combination of the selected media will result in the greatest knowledge gain?
3. To what extent do elementary school children in Zaria appreciate animated instructional materials?

Using a pre-post test research design, instructional materials were developed and tested on a random sample of school children to involve students in learning a folklore, using different modes of instruction. A pre-test was administered to the subjects prior to the treatment. Four different groups were assigned to four different modes of instruction. In each school, four groups of five pupils were used for the experiment. The first group motion, were exposed to cartoon animated film, the second group static, were exposed to static pictures, the third group, were exposed to audio tape and finally the fourth group, were presented with verbal lecture. All the groups finally answered post test question, based on the instructional objectives after receiving the treatment.

The analysis of the data on the pre-test and post test comparison using one-way analysis of variance (ANOVA) and chart was used to ascertain the relative effectiveness and values of the four modes of instruction used for this study. In general, it was found that all the modes of instruction had some effect to a reasonable degree. The subjects gained knowledge in the following order: Motion 76.7%, static 69.3%, lecture 63.3% and Audio 60%. The highest percentage

performance among the four modes of instructions was the motion picture group. The "motion" (animated cartoon film) group revealed a significantly higher level of impact which supports the third research question and has shown that elementary school in Zaria appreciate animated instruction materials.

5.1 Recommendation

Based on the data collected for this study and the conclusion drawn, it is recommended that:

1. Motion animated cartoon film be used increasingly in instructing or communicating folklore to students in elementary schools to gain student interest and to motivate them.
2. Schools should as much as possible make use of animated instructions as a means of increasing learning.
3. The findings of this study also show that the graphic artist particularly the animator as a communicator has an important role to play in our educational setting. This is so because the use of static and animated signs to communicate ideas whether in the school setting or social instruction is the preoccupation of the graphic artist. Thus

systematic effort should be made to use graphic skills and technique to introduce more symbolism as against verbalism in our communication system.

5.2 Recommendation for Future Studies

In view of the limitation of the present study, a more comprehensive and specific study of instructional media could be done to ascertain the following:

1. The relative values and effectiveness of the four modes of instruction used for this study in teaching other subject matters.
2. The relative effectiveness of different animation techniques.
3. The use of animation as an instructional media in instructing different grade levels of students.
4. What combination of the selected media (motion animated film, static cartoon pictures, audio tape and lecture presentation) will result in the greatest knowledge?

5.3 Conclusion

The research in the area of relative values and effectiveness of Motion animated cartoon film, static cartoon pictures, Audio tape and verbal lecture presentation has been limited. There are a few related studies conducted abroad, however, most of these studies particularly those involving animation are subject to validation in the Nigerian cultural setting. Based on the analysis of the data the following conclusions were drawn.

1. All the four modes of instructions used for this study contributed to knowledge.
2. Motion animated cartoon film has proved to be better in instructing or communicating a folklore to pupils in elementary three. There is increased interest among Nigerian children in recent years in the area of television viewing. This is evidenced in the area of animated cartoon film, which was revealed from this study and also almost all the television houses in Nigeria shows the popular children programme sesame Street.

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Head of Dept: S. A. ADETORO. B.A. M.A. (A.B.U) Ph.D. (Texas).
(GRAPHICS SECTION)



Your Ref
Our Ref F.ID.33/88

Appendix 1A

21st March, 1988

The Headmistress
ABU Staff School
Samaru - Zaria

Dear Madam

LETTER OF INTRODUCTION

Bearer (Mr. Godwin Ukah) is a student in this department currently collecting data for his M.A. Thesis. We will appreciate your assistance in this regard, as his research involves some data from A.B.U. Staff School and other elementary schools.

Thank you for your support.

Sincerely yours

J.S. Rishante
f Dr. J.S. Rishante
HEAD OF SECTION




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Head of Dept: S. A. ADETORO. B.A. M.A. (A.B.U) Ph.D. (Texas).



Your Ref
Our Ref... F.ID/33/88

Appendix 11A

21st March, 1988

The Headmaster,
L.E.A. Primary School,
Samaru,
Zaria.

Dear Sir,

LETTER OF INTRODUCTION

Bearer (Mr. Godwin Ukah) is a student in this Department currently collecting data for his M.A. Thesis. We will appreciate your assistance in this regard, as his research involves some data from L.E.A. Primary School, Samaru and other elementary schools.

Thank you for your support.

Sincerely yours,

J. S. Rishante
Dr. J.S. Rishante
Head of Section.





DEPARTMENT OF INDUSTRIAL DESIGN,
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Head of Dept: S. A. ADETORO, B.A. M.A. (A.B.U) Ph.D. (Texas).



Your Ref
Our Ref..... F.ID.33/88.....

Appendix 111A

21st March, 1988

The Headmistress
Zaria Children School
ZARIA

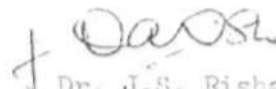
Dear Madam

LETTER OF INTRODUCTION

Bearer (Mr. Godwin Ukah) is a student in this Department currently collecting data for his M.A. Thesis. We will appreciate your assistance in this regard, as his research involves some data from Zaria Children School and other elementary schools.

Thank you for your support.

Sincerely yours,


Dr. J.S. Rishante
Head of Graphics Section



Department of Ind. Design
Ahmadu Bello University
Zaria

Appendix C

20th January, 1988.

Dear Sir,

VALIDATION OF MULTIPLE TEST ITEMS FOR ELEMENTARY
THREE PUPILS IN ZARIA SCHOOLS.

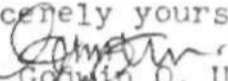
I am carrying out a study in the relative values and effectiveness of animated cartoon film, static cartoon pictures, audiotape and lecture presentation in instruction. The resulting test will serve as useful instrument.

In order to help in arriving at instrument that will meet the desired objective, I am sending to you here with prepared test items for elementary three pupil in Zaria school, for validation. To validate the questions you are to study each item and certify that its

- (a) meet the instructional objectives and the level of the student for which it is prepared.
- (b) Contains only one correct answer which is easily spotted by pupil.

You are requested to kindly forward your response with the accompanied material to me as soon as possible.

Your anticipated kind cooperation.

Sincerely yours

Mr. Gowin O. Uka.

TEST ITEM

(D)

10 minutes

Candidate's Name:

Candidate's School:

Candidate's Age:

Candidate's Sex:

Copperneld (1979), stated that tests are one method of giving students opportunity to show what they know or what they can do ... hopefully as the result of instruction. It is therefore true to say that the test x-ray the content of an instruction, bringing out the key issues or facts that deserve more attention. Based on the instructional objectives the following test items were constructed.

CHOOSE OR SELECT WHICH ITEM IS MOST CORRECT

1. Name the animal that was pulling his load along during his journey.
 - (a) The lizard
 - (b) The tortoise
 - (c) The monkey
 - (c) The dog.

2. Which animal cut the load that was being pulled along?
 - (a) The lizard
 - (b) The tortoise
 - (c) The monkey
 - (d) The dog.

3. Which of the animals was enterprising and lived through honest means?
 - (a) The goat.
 - (b) The lizard
 - (c) The monkey
 - (d) The tortoise.
4. Which of the animals was crafty and lived through piracy?
 - (a) The tortoise.
 - (b) The monkey.
 - (c) The lizard.
 - (d) The goat.
5. In what form was the load carried by the animal as he walked along?
 - (a) He put the load on the head.
 - (b) He packed the load under his belly.
 - (c) He tied the load with a string.
 - (d) He tied the load in a hand bag.
6. At one point, which one of the animals was annoyed?
 - (a) The goat.
 - (b) The tortoise
 - (c) The monkey
 - (d) The lizard.
7. Why did you think he was annoyed?
 - (a) Because he was tired.
 - (b) Because he lost his load.
 - (c) Because he needed company.
 - (d) Because he was hungry.

8. What was the reaction of the animal that grew annoyed?
- (a) He cried.
 - (b) He took a vow of vengeance of the thief.
 - (c) He went to court.
 - (d) He determined to do without the load.
9. One of the animals that cut the load went and hid without knowing his was outside.
- (a) His head.
 - (b) His eyes.
 - (c) His foot prints.
 - (d) His tail.
10. What did the angry animal do when he found the animal that cut his load?
- (a) His load was given back to him.
 - (b) He took him to court.
 - (c) He pulled and cut the animal's tail.
 - (d) They decided to settle out of court.

APPENDIX B

INSTRUCTIONAL CONTENT FOR DATA COLLECTION
INSTRUCTIONAL PRODUCT MATERIAL (LECTURE)
TORTOISE AND LIZARD

Watson (1979) define "story" as a succession of incidents real or imaginary, related in order to amuse and interest.

Once upon a time, there was an enterprising and conservative Tortoise, who lived through honest means. On the other hand, was an indolent and crafty lizard who lived through piracy.

One day, the tortoise was returning from his farm with his load as he walked along his path. The crafty lizard who was hiding somewhere watching the tortoise came out with a knife and followed the tortoise closely, without his knowledge. The lizard cut the load with his knife and ran off with it before the tortoise could catch him. The lizard went and hid without knowing that his tail was outside.

The tortoise became angry with the lizard and vowed to deal with him. He sat down and started thinking of what to do with the crafty lizard. After a while, he set out to search for the crafty lizard. He later found him where he was hiding with his

tail outside. The tortoise grasped the tail and wanted to pull out the lizard with his tail so that he could recover his load, but on the process he cut the lizard's tail and fell down on his back. The lizard finally ran deeper into his hiding place. Any time you meet a lizard with short tail, you will be able to know that it was because of the battle between him and the tortoise that made him to have a short tail.

Moral: It is good and better for one to live by what he/she has than to live through dishonest means.