COVER PAGE

EFFECTS OF AUDIO-VISUAL AIDS ON STUDENTS` ACADEMIC ACHIEVEMENT IN SOCIAL STUDIES IN JUNIOR SECONDARY SCHOOLS IN BAUCHI STATE, NIGERIA.

BY

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B.ED/SOCIAL STUDIES (1995)
M. ED/EDU/2185/2011-2012

DEPARTMENT OF ARTS AND SOCIAL SCIENCE EDUCATION
FACULTY OF EDUCATION
AHMADU BELLO UNIVERSITY, ZARIA

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A THESIS SUBMITTED TO THE SCHOOL OF POSTGRADUATE STUDIES AHMADU BELLO UNIVERSITY, ZARIA. IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF MASTER'S DEGREE IN SOCIAL STUDIES EDUCATION.

DEPARTMENT OF ARTS AND SOCIAL SCIENCE EDUCATION

FACULTY OF EDUCATION

AHMADU BELLO UNIVERSITY, ZARIA-NIGERIA

SEPTEMBER, 2015

DEDICATION

I dedicated this thesis to my beloved parents Mr. Gabi and Mrs. Zainab for their tireless encouragement to me. To my elder brothers in person of Ishiyaka Gabi and Magaji Gabi. To my children, Murabbi Ahmed Gabi, Umar Ahmed Gabi and Fatima Ahmed Gabi for their love, patience tolerance and moral support.

CERTIFICATION

This thesis entitled effects of the of Audio-visual aids on students academic achievement in social Studies in junior secondary schools in Bauchi State meets the regulations governing the award of the master degree of Social studies, Ahmadu Bello University, Zaria and is approved for its contribution to knowledge and literary presentation.

Dr. MC, Ubah Chairman, Supervisory Committee.	Signature	Date
Dr. H.I, Bayero Member, Supervisory Committee.	Signature	Date
Prof. F.S.M, Koya Head of Department of Arts and Social Science. Education	Signature	Date
Prof. Kabir Bala Dean, School of Postgraduate Studies	Signature	Date

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ABSTRACT

This study investigated effects of audio-visual aids on student's academic achievement in social studies in junior secondary schools in Bauchi State. Three objectives, research questions and hypotheses were formulated to guide the researcher in the conduct of the research. The study adopted quasi-experimental design involved one hundred and sixty four (164) students for the study. Data for the study were collected during teaching-learning process which lasted for six weeks. The instruments used for data collection were teacher-made achievement tests conducted every two weeks both in treatment and control groups. Non participant observation technique was used to observe and record student's behavior during teaching-learning process. Structured interview technique was also employed to assess the level of cooperation of students in both treatment and control groups. The research hypotheses were analyzed using descriptive statistics (percentage, mean, standard deviation) and inferential statistics (Z-test and U-test). The major findings of the study indicated that comprehension of students taught social studies using audio-visual aids (Video show) was more effective than that of those taught using chalk and talk teaching process. It also showed that demonstration of students taught social studies by using audio-visual aids (video Show) was high than that of using chalk and talk teaching process. It also indicated that cooperation of students taught social studies using audio-visual aids (video show) was more impressive than that of those taught using chalk and talk teaching process. Finally, the researcher recommended that the government should as a matter of urgency provide schools with these audio-visual materials. Further more, social studies teachers should be sensitized on how to use the materials to ultimize academic achievement.

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OPERATIONAL DEFINITIONS OF TERMS

- Academic achievement:- This could be termed as total progress of students make in scholarly related activities as measured by scores on tests, interview, observation and development of proper attitudes over a period of time.
- Chalk and talk teaching process:- It is a way the teacher (researcher) adopts to teach students without any instructional materials.
- Treatment group:- Refers to a class of students where the teacher (researcher) uses audio-visual aids (video Decoder) to teach them.
- Control group:- It is a class of students where the teacher (researcher) teaches without any instructional materials.

ABBREVIATIONS

- A.V. = Audio-visual
- D.V.D. = Digital video decoder
- J.S.S. = Junior secondary school
- T.G. = Treatment group
- C.G. = Control group
- S.D. = Standard deviation
- N. = Number

CHAPTER ONE
INTRODUCTION

1.1. Background to the Study

The subject social studies as a multidimensional discipline in the Nigerian school curriculum has got few text books on it with some marked specifications of teaching aids for illustrations. In some cases, directives and exercises for students as well as for teachers are not given, while in few cases such exercises and instructional guides are not given at all, this quite often than not lead to the learning of just some specified concept in an integrated curriculum. Many teachers hold the notion that social studies is a simple subject that requires little if any, preparation. To them, teaching social studies involves merely talking to students about a given topic as may be taken from text books or a more look at some pictures. (Talabi, 2004).

This is sometimes followed by some discussion and students may ask questions afterwards, about what they have learnt. They may draw pictures themselves of what has been discussed and that is all. Social studies teaching is more than this, that is why adequate teaching aids are needed in teaching the subject at any level of education. More over, the methods require in the teaching of social studies such as inquiry, discussion, Role-playing simulation (both activity and historical) demand a lot of preparation on the part of teachers and students alike. In order to communicate effectively or elicit the desired responses, there is the need to employ different ways and means (audio-visual aids) which will appeal to most if not all the senses of the person receiving the message.

The requirement needed by the teacher to make effective teaching is resourcefulness. Aguekobuo, (2004) is of the view that, way to do this is for the teacher to engage in human capacity building which will involve the use of variety of strategies and techniques in his/her teaching. For these reasons social studies teachers need to be acquainted with all the audio-visual aids that will help optimally teaching and learning

process. It has also be observed that the use of verbalization method of teaching social studies over the years has not made the subject very interesting. Agu and Hammad (2005), state that, the performance of students has been very low. In fact the need for effective teaching and learning of the subject cannot be over emphasized. Agu, and Hammad, (2005) further observed that, teachers still use mainly traditional method of teaching which lead to poor students` understanding and performance of the subject. Abolade(2009) posits that social Studies like other subjects, can be effectively taught by employing various Audio-visual aids that appeal to three senses sight, touch and hearing. Among the numerous possible factors affecting teaching and learning in our schools are the poor teaching strategies. Abolode, (2009) further stated that study have shown that out of the five (5) sense organs we use for acquiring knowledge, visual materials which are learning and instructional materials that can be seen only taken up to 80% in the learning process, while Audio materials and equipment that appeal to our sense of hearing takes 11% and olfactory, tactile and tasting takes 9%.

Therefore, it is stated that Audio-visual instructional materials have made qualitative and quantitative education more meaningful because they have produced desirable results. However, this subject does not seem to be receiving serious attention from all concerned, namely; students, teachers, sponsors of education and educational administrators/managers to mention but a few. These materials have value for instruction and present in different variants and qualities today. The uses of audio-visual materials have been discovered to facilitate effective communication transfer of information, knowledge skills, attitudes and other useful capabilities. Teachers should know that the resources for learning that instructor and students will use can influence the effectiveness of instructional programme. Audio visual materials could be said to be the various method, or devices used to disseminate information in the teaching and

learning process, which the social studies teachers need to use to enhance the students better understanding of cultural, means of transportation system and conflict situations in Nigeria.

However, lack of adequate and appropriate audio-visual materials essentially for the effective teaching and learning of the subject is rather making parents, teachers and students to perceive the integrated social studies in the school curriculum through out the country with confusion and perplexity. It is against this background that the researcher tends to investigate the effect of the using of audio-visual aids on students` academic performance in junior secondary school social studies education in Jama`are and Katagum Local Government Areas.

1.2. Statement of the Problem

As a result of advancement and development of modern technology varieties instructional materials can be used to make learning more vivid and effective. This means that students can perform better wherever they are taught with these instructional materials particularly audio-visual aids as their comprehension and demonstration and cooperation are expected to enhance tremendously in teaching-learning process. Unfortunately, most of the social studies teachers neglect the use of audio-visual aids in teaching the subject. Probably, due to non availability of the materials or lack of techniques for using them.

It is a against this background that this study is aimed at finding out effect of the use of audio-visual aids on student's academic achievement in social studies in junior secondary schools in Bauchi State.

1.3. Objectives of the Study

The objectives of this study have been formulated based on cognitive, affective and psychomotor domains of learning objectives as follows:-

i. Find out the extent to which comprehension of students taught social studies using audio-visual aids differs from those taught using chalk and talk teaching process.

ii. Find out the extent to which cooperation of students taught social studies using audio-visual aids differs from those taught using chalk and talk teaching process.

iii. Find out the extent to which demonstrations of students taught social studies using audio-visual aids differs from those taught using chalk and talk teaching process.

1.4. Research Questions

The following research questions were raised for this study, viz:-

i. To what extent does comprehension of students taught social studies using audio-visual aids differ from those taught using chalk and talk teaching process?

ii. To what extent does cooperation of students taught social studies using audio-visual aids differ from those taught using chalk and talk teaching process?

iii. To what extent does demonstrations of students taught social studies using audio-visual aids differ from those taught using chalk and talk teaching process?

1.5. Hypotheses

The following hypotheses were proffered for this study, viz:-

i. There is no significant difference between comprehension of students taught social studies using audio-visual aids and those taught using chalk and talk teaching process.

ii. There is no significant difference between cooperation of students taught social studies using audio-visual aids and those taught using chalk and talk teaching process.

iii. There is no significant difference between demonstrations of students taught social studies using audio-visual aids and those taught using chalk and talk teaching process.

1.6. Significance of the Study

The study will invariably be of tremendous importance to students, teachers and researchers in social studies accordingly. The work will enable student's to read and understand various audio-visual aids that facilitate teaching learning process, particularly video show. The Study will serve as reference to teachers who wish to find out the impact of audio-visual aids (video-show) on students academic achievement particularly in junior secondary schools. It will also highlight the appropriate materials of teaching social studies which will bring about student's interest and active participation in the subject. The work will enable the teachers to understand that the success of any teaching-learning activities is determined by how much the students are able to learn or gain from teaching. This can be achieved through the use appropriate audio-visual aids. The study will serve as a reference to researchers who wish to embark on further research on effects of audio-visual aids on students' academic achievement. The work will also enable

researcher to understand the impact of comprehension, demonstration and co-operation in the use of audio-visual aids in teaching-learning process.

1.7. Scope of the Study

The study examines effects of audio-visual aids on student's academic achievement in junior secondary schools in Bauchi State. Even though the study was restricted to two local government areas, namely Jama'are and Katagum local government. Two junior secondary schools were selected for the study from each local government. More ever, the researcher employed video decoder (video show) as an audio-visual aid among others in teaching-learning process. This occurred to due to non availability of audio-visual aids in most of the schools as well as time, financial and human constraints. However, the findings would not be limited, but should be generalized to what obtained in most of the junior secondary schools in the state.

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CHAPTER TWO

REVIEW OF RELATED LITERATURE

2.1. Introduction

This chapter reviewed materials and other works related to the use of audio-visual aids and they were presented in the chapter under the following sub-headings:-

i. Theoretical frame work

ii. General instructional materials

iii. The concept audio-visual aids

iv. Types of audio-visual instructional aids

v. The importance of audio-visual aids in teaching learning process.

vi. Academic achievement

vii. Concept of Comprehension

viii. Concept of Demonstration

ix. Concept of Cooperation

x. Empirical studies.

2.2. Theoretical frame work

Almost every educational reformer has expressed deep concern over the excessive use of words that carry the shadow of meaning but not the substance. Several educationists have struggled to make education realistic. One of such educationist was Dale, E. (1969) who became the chief exponent of audio-visual aids in teaching. He was the originator of the 'cone of experience'. The diagram presented in his book "audio-visual method in teaching."All the learning experiences can be utilized for classroom teaching. Edger Dale presented all the learning experiences in his pictorial device "pinnacle form" which he called the 'cone of experience' if we group the pinnacle from its based, we find that every aid has been arranged in the order of increasing abstractness or decreasing directness. It may be stated that the 'cone' classifies the audio-visual aids

according to their effectiveness in communication which means the aids at the base of the cone as "most effective" and relative effect gradually decreases in the cone. Al the pinnacle of the cone, the direct, purposeful and verbal experiences are represented. The experiences include in the cone were as follows:-

i. Direct, purposeful experience that is seen, handled, tasted, felt, touched and smelt, the experience that is grained through the senses. These experiences are not only direct but are also purposeful. Purposeful means that the experiences are active with a purpose. "An ounce of experience is better than a tone of theory, simply because it is only an experience that any theory has vital and verifiable significance".

ii. Contrived experience is like a working model, which is an editing of reality differs from the original either in size or in complexity. The simplification of the real object becomes necessary when the real thing cannot be perceived directly. The real object may be too big or too minute, may be obscured or confused or concealed. In such circumstances, the limitation is preferred for better and easier understanding. The 'cone' proposed by Edgar Dale was the earliest attempt to classify the audio-visual aids according to their effectiveness in communicating ideas. The cone classifies sensory aids in terms of greater or less concreteness and abstractness as learning experiences. Projected aids occupy a top position and are considered to be more effective in teaching than the non projected aids. Figure. 2.2.1 depicts a practical cone classifying deferent aids with reference to their relative effectiveness.

2.3. General Instructional Materials

Instructional materials are all the objects, things, people and places use to promote the teaching and learning process. The organized combination and utilization of materials facilities equipment and people ease the presentation content for the realization of stated objectives, Ema and Ajayi (2004) state that instructional materials are all the tools, which can be used by the teacher to provide help and encouragement to learners` learning activities. In addition, Jocob (1999) stated that instructional materials are anything and anybody that can be used by the teacher and learners before, during and after the lesson to facilitate the achievement of objectives. In other words, instructional materials are devices that facilitate the transmission, understanding and appreciation of concepts, skills, values and attitudes. The reason is that, the uses of such materials task the various sense organs of the learners, encouraging their active participation in the instructional process through their various senses, understanding is promoted and the teacher is saved from making lengthy explanations that further confuse the learners also, the more of the senses contributed in a lesson by instructional materials the more reality is stimulated.

It is in line with this though that Ema and Ajayi (2004) stated that instructional materials are all the tools, which can be used by the teacher to provide help and encouragement to learners learning activities. Such materials bring together man and materials in a systematic cooperation to effectively solve educational problems.

2.3.1. Categories of instruction materials and resources

Instructional materials are variedly categorized. For instance, Dubey, and Barth, (1980) grouped them into two, namely:

i) Reading materials

ii) Non-reading materials

Michealis (1980) classified then into

i) Reading material

ii) Audio-visual materials

iii) Community resources

Another categorization provided by Dubey and Barth (1980) has:

i) Reading materials

ii) Audio-visual material

iii) Community resources

iv) Human Resources

They made a distinction between the following

i) Materials, which offer content: for example, charts, graphs, audio recordings, tools and implements, print materials of all kinds, globes, map, painting, resources, in the community etc.

ii) Materials for presenting content such as audio and video recorders, bulletin boards, chalkboard, flannel board, slide projectors, computers, television etc. another grouping of instruction materials includes:

iii) Human resources: which consist of individuals who provide various services in the teaching and learning process. They include: professionals and non-professionals.

iv) Non-human resources: which include physical facilities and instructional materials, which serve as tools and devices through stimuli can be passed or obtained. They are all forms of information carriers.

Dubey, and Barth, (1980)) adopted the following taxonomy

i) Non-projected visual materials further sub-divided into printed and non-printed media. The printed media include:- textbooks, teachers' handbook, posters, newspapers, and journals. The non-printed media include:- chalkboard, models, games and real things.

ii) Projected and electronic media sub-divided into software and hardware. This group of materials requires the use of electronic devices. Software materials consist of audiotapes, video tapes, transparencies, slides, filmstrips etc.

iii) Hardware materials are: audio tape recorders, video tape recorders, slide projector, film projector, overhead projector etc.

2.3.2. Instructional resources for primary and secondary schools

Some instructional resources are best suitable and effective for primary school children because at their age they are most curios, and want to use their sense of touching, vision and feeling. Thus materials such as pictures, charts, tools, drawing, maps, physical features, model, posters and so on, will be very effective for them. At the secondary school level, use of printed materials such as newspapers textbooks, photographs, audio-visual materials, globe, chalkboard and many others will be appropriate for their age, content for learning and the objectives of teaching the content. Thus, the following are the breakdown of instructional materials to use in teaching of social studies at the primary and secondary school level:

Classification of instructional materials

INSTRUCTIONAL MATERIALS

*Print Material	*Non-Print material		*Community Resources	
Textbooks				
- Teacher guides	Electrically Operated	Non-Electrically	Human	Non Human
- Supplementary readers	-Computer	-Operate	-Professional	-Place of
- Magazines	-Slide	-Charts	- Non	-Interest
- Newspapers	-Radio	-Model	-Professionals	-Physical
- Dictionary	-Television	- Posters		-Features
- Encyclopedia	-Overhead project	-Graphics		
- Poems	-Films	-Games		
- Maps	-Film projector	-Pictures		
- Short Stories	-Tape Recorder	-Globe		
- Pamphlets	-Video tapes	- Printings		
-Bulletin	- Film Strips	- Flannel board		
		-Real Objects (Realia)		

Source: (Ololobou, 2010)

2.4. Concept of Audio-visual aids

Many definitions of audio-visual aids have been made. Most of such definitions in terms of equipment and materials and their use in the teaching and learning process. Ofoegbu, (2009) in his illustrations defines audio-visual aids as teaching aids which are of two kinds-materials and verbal. The materials he called the hardware and soft ware use in teaching and these include objects, models, photograph, painting, drawing, diagram, films among others.

Another definition was made by Talabi, (2004), who sees audio-visual materials as a combination of audio-visual materials which are used in instructional or learning process to facilitate teaching and learning. According to Abolade, (2004) audio-visual aids are supplementary devices by which teachers, through utilization of more than one sensory channel is able to clarify, establish and correlate concepts, interpretations and appreciation. In his definitions, Nwanna-Nzewunwa, (2003) views audio-visual materials as any device which can be used to make the learning experience more concrete, more realistic and more dynamic.

Generally, audio-visual materials are those materials which are used by a teacher or an instructor to illustrate the information that is contained in a book in such a way that it will be clearly understood by the students. Audio-visual materials are produced, distributed and used as planned components of educational programmes. Audio-visual materials are multi sensory materials which motivate and stimulate the individual. They make dynamic learning experience more concrete realistic and clarity. Audio-visual materials are sensitive tools use in teaching as avenues for learning, they are planned educational materials that appeal to the senses of the people and quicken learning facilities for clear understanding.

Audio-visual materials are information-carrying technologies that are used for instructional purpose, aimed at delivering educational instruction very quickly and widely. Talabi, (2004) stated that Audio-visual materials, demonstrate skills and attitudes during teaching-learning process. Nwanna-Nzewunwa, (2003) revealed that the application of Audio-visual materials in teaching-learning process has been formed to enhance effective instruction. Today, audio-visual materials are highly rated world wide to be of great value in the teaching and learning process.

Nwanna-Nzewunwa, (2003) added that, there are still a large number of instructors or teachers who have not yet fully comprehended and appreciated the value of audio-visual materials in realizing the objectives of education. He also said that, many of them find it difficult to handle Audio-visual materials and proceed to teach using the outdated expository method.

2.5. Types of Audio-visual aids

There are various types of audio-visual aids use in teaching and learning in social studies class with include:

2.5.1. Television

Experience has shown that television has the quality of bringing people into immediate contact with happenings anywhere. It has great positive possibilities. As an aid in the teaching of social studies. Heeks, (2008) stresses that the use television is systematic instruction has three major purposes.

i) That it expands and amplifies limited instructional resources, makes a few teachers do the work of many and thereby equalizing learning opportunities among learners.

ii) That, it makes education available in full measure to more people with no significant increase in cost.

iii) Educational Television has solved the problem of over crowded classroom offer a means where by effectiveness of a competent teacher can be extended to reach an unlimited number of students.

2.5.2. How to Teach with Television

To teach most effectively with television the instruction must be accompanied with:-

a) Pre-viewing activities

b) Activities during the viewing

c) Post viewing or follow up activities

Pre-viewing- Students preparation for viewing televised lesson is of primary importance. Before viewing the televised lesson Kinder (2009) expresses that, there should be a series of questions related to each of the televised lesson. The assignments an outline of each television lesson and a listing of sources material should be given to the students before the televised course. He goes further to emphasize that assignments should direct students source materials for study and should include a number of key questions which can be answered. So as to test the total learning that is expected to occur.

Such test questions should be administered immediately after the viewing of the televised lesson. For the effective learning through this media Brown (2007) maintains that a few pertinent introductory comments should be made by the teacher before the televised lesson store. During viewing, Dale (1991) is of the opinion that students can take notes during viewing but it is however, not essential because effective learning can take place while viewing without necessarily taking down note. He further argues that students can jot down relevant comments or questions that occur to them during the viewing session. In this way, the teacher can discover points which were not fully

understood by the students at the time they were viewing the lesson. Here the teacher steps into air out comments that questions should be considered soon after the lesson before the test, hence they will serve as the base for evaluation of students general understanding of the lesson.

In summary students should be encouraged to under take activities that will reinforce learning and sharpen their interest and sense of inquiry. They may write a review or some many of the televised lesson. A question and answer period on the notes that were taken during a televised lesson will disclose any vaguely understood and difficult parts of the lesson.

2.5.3. Computer image Projection

This is the most modern and advanced means of bringing learners in contact with knowledge it is basically individualized instructional materials and the most suitable and versatile medium for individualized learning because of the immense, power in information processing. Azi (2009), confirmed the unique value of computer, the ``ultimate teaching machine which alone has the potential of the adapting the selection and presentation of the learning and instructional materials to pace, style and individual differences of a given student and in collecting and analyzing data relating to the effectiveness of social studies teaching learning process. Azi (2009) also added that computer can be used as a completely self-contained unit or in combination with a wide variety of other media and can be used in many ways for effective social students instructional delivery, such as mass instructions, group learning, individualized instruction and social studies, group learning. Its function can range from simple management to complicated social studies tutorial instructions.

The need for computer technology and literacy in our educational system has because more relevant. The federal government has launched the national policy on

computer literacy (1988) at primary, secondary and tertiary levels of education. For this policy to succeed, computers requires special environment and trained teachers. According to the committee on computers literacy, the following general policy objectives for the nation were outlined:

a) To bring about a computer literate society in Nigeria by the middle 90s,

b) To enable the present generation of school children at different levels of education appreciate the potentials of the computer and be able to utilize the computer. In various aspects of life and later occupation. Indeed, there is currently an attempt to create a global classroom (campus 2000) which involves an electronic network services. The network seeks to cater for information and communication needs at all levels of education through out the world. This is to be done through the provision of access to a wide variety of public information data base across the world. (Azi, 2009)

2.5.4. Internet

The breakthrough in science and technology has expanded frontiers of scientific information and the processes of sharing knowledge. Currently the digital data stored in computer beamed through communication satellites, remote sensing, telecom referencing, video-conferencing internet database and e-mails are database changing the trend in the use of analogue information. Ajagun, (2003) reported that the number of web servers that distribute information worldwide are fast replacing science information stored on paper (hard information) these assertions were also affirmed by other scholars (Akudolu, 2007; Heinich, Molenda, Russell and Smaldio; 2006; Bodzin, 2005). The world wide web (www) has become a more interactive, faster and convenient mode of information sharing for both teachers and students.

2.5.5. Video-tape recorder

This is machine records and produces sound a teacher or class may be able to record themselves or any other suitable materials they need which can be used to improve and promote teaching and learning social studies activities in the junior secondary school. The availability of video tape recorder cassette has made "canning" lesson and possible by recording of professional programme lesson which can be viewed in class room. Importance of video tape recorder in teaching and learning social studies in junior secondary schools. The educational value of video tape recorder in the teaching and social studies is as follows:-

Video tape recorder are used to bring situation near to students, thing or object that can not be brought into the class for the purpose of teaching can be put in picture to show them.

a) It makes learning become more permanent to the students

b) It arouses the interest and curiosity of the students in a motivation bid

c) It reduces too much talking on the part of the teacher for explanation. It makes what is being taught very real to the perception level of the students.

2.5.6. DVD Tape Recorder

This is an electronic device which deals with picture and sound when operates like that of video tape recorder. DVD tape recorder use flat instead of cassette and it is projected on television screen. D.V.D tape recorder can be used to teach social studies class as it makes learning to be more effective and meaningful. In using D.V.D tape recorder in teaching and learning social studies, the teacher should consider the following guidelines:-

1. Suitability and appropriateness of the intended purpose.
2. Suitability for the learning environment
3. Age of the learners

4. Ways and means of using the time with out necessarily destructing other teacher plan.
5. The materials most be relevant to the topic of the subject.

2.5.7. Film Projector

Motion projected visual (pictures) suggests pictures that moves, unlike the still pictures which are motion less when projected. Azi (2009) stated that a motion picture is a length of film which contains a series of still pictures which are designed to have the effect of pictures in motion when projected with a motion picture projector. Abolade (2004) stated that motion pictures come in colour or black and white and most modern video tope camera are equipped with facilities for recording moving objects and other reed to reed tapes, video tapes are now available in cassettes and can easily be recorded or replayed. Motion pictures are unique in the social studies teaching-learning process because they combine motion pictures, silent, sound and realistic picture to provided realistic experiences to the audience or students. Motion pictures bring the distant and present into classroom and it provides on intense experience of a high emotional quality when the films compel and sustains the attentions of students to the extent that most outside distraction could be kept off.

2.6. The Importance of Audio-visual aids in Teaching-Learning Process

The use of audio-visual aids facilitate and ease better understanding, capture of more authentic instruction with better view of image and general sharpening of intelligence. This indicates that large class rooms are needed; there are problems of effective communication and the ability to cater for the individual differences in learners and their specific needs. Roblyer, vikoo & Barbor (2003) stated that are positive method of over coming this problems is to use the public address system for effective

communication and the over head projector for projecting clear, large images for the audience. The use of Audio-visual aids will place the talents of our best teachers at the disposal of millions of viewers at the same time. Roblyer, Vikoo & Barbor (2003) further explained that, most problems of population explosion usually accompanies knowledge and information explosion. Knowledge is made concrete by the use of Audio-visual aids like slide, filmstrip, opaque motion pictures, video recorder and microforms for storage of information or data for use. The commonest problem in our junior secondary schools nowadays is that, students learn and forget, which is caused by too, much theoretical expressions and lack of audio-visual aids for instructions by the teachers while the students are passive listeners. (Efebo, 2006). Talabi, (2004) Summarized some of the values of Audio-visual aids:-

- They illustrate and clarify non-verbal symbols and images, quantitative relationship, abstract concept and specific details.
- They promote greater acquisition and longer relation of actual
- Knowledge. They Stimulate interest in learning which leads to plenty of activities.
- They captivate and hold attention.
- They reinforce verbal message
- They provide for direct interaction of students within the school.
- Audio-visual aids give the students a better understanding of what the teacher tries to explain in the class room.

Timothy in Abolade (2009) reported that the use of Audio-visual aids revealed that there is a Chinese adage that Says:-

- I hear and I forget
- I see and I remember

- I do and I understand``

Audio-visual aids are used to show students how a specific perceptual motor skill is performed correctly. Therefore the use of audio-visual aids are not a luxury but a necessity which must be given due consideration.

2.7. Academic Achievement

Academic achievement could be termed as scholarly related progress of students which is the outcome of all learning experiences that students have in a programme of education whose purpose is to attain goals and related specific objectives. Academic achievement is the set of actual experiences and perception of the experiences that each individual student has of his or her programme of education. Academic achievement is the amount of knowledge derived from learning in the school and it is the product and outcome of instruction in educational institution. Okunrotifa, P.O. (1977) defines academic achievement as "the knowledge attained or skills developed in the school subjects, usually designed by test scores or by marks assigned by the teacher or both". Academic achievement has been defined as accomplishment of proficiency of performance in the school subjects. Ohuche, (1988) states "academic or educational achievement usually denotes activity and mastery, making an impact on the environment rather than fatalistically accepting it and competing against some standard of excellence" Academic achievements in school objectives consists of moving towards instructional objectives which are degree to which the students have moved towards the objectives of the school. Those objectives are the goals in the direction of which the curriculum seeks to change the students. Therefore, academic achievement is the accomplishment of proficiency of performance in a given skills or body knowledge. Academic achievement is something you do or attain at school, college or university in classroom, laboratory, library of field of work. In this study one hundred and sixty-four (164) academic

achievement result was interpreted as accomplishment, proficiency and attainment in the school subjects. The academic achievement was represented by scores assigned by the researcher in the formative evaluation.

2.8. Concept of Comprehension

Comprehension is simply defined as the ability to grasp the meaning of learning experiences. It is second level of cognitive learning involves understanding of the concepts, principles or ideas. This could be by way of rephrasing, summarizing or interpreting. It also involves the ability to isolate, compare a number of events or ideas. For example, after reading through a passage, a student could be asked to answer a number of questions based on the passage. It could be also be asked to report the message or ideas in the passage in his own words. He could also be asked to give the meaning of certain words in his own words as used in the passage. Behavioural objectives at this level are stated with action verbs such as explain, classify, summarize, interpret, and compare among others. These tend to focus on the students ability to understand what he has leant.

2.9. Concept of Demonstration

Demonstration is the ability to perform certain skills in carrying out a task. Demonstration as a technique which often used by the teacher, teaching various subjects which ideas, attitudes and processes can be demonstrated. The spoken word is supplemented with demonstration using varied aids resulting in auditory and visual learning, concrete demonstration through aids is reinforced instruction through two channels the eye and the ear. The emphasis here is on the ability to perform a task based on the skills already leant. For example performing a Dancing, a Greeting, a Jumping among others. This requires situational or on the spot adjustment by manipulating skills.

2.10. Concept of Cooperation

Cooperation is an act of working together towards a shared aim. In educational perspective, it is an approach which aims to organize classroom activities into academic and social learning experience. There is much more to cooperative learning than merely arranging students into groups. Students should work in group to complete task collectively to words academic goals. Unlike individual learning, which can be competitive in nature, students learning cooperatively cam capitalize on one another's resources and skills. (Asking one another for information, evaluating one another's ideas, monitoring one another's work e.t.c). Further more, the teacher's role changes from giving information to facilitating students' learning. Every one succeeds when the group succeeds. Ross and Smyth (1995) describe successful Cooperative learning tasks as intellectually demanding, creative, open-end and involve higher order thinking tasks.

2.11. Empirical Studies

This research work has reviewed some empirical related studies conducted by different researchers and at different time. One of such work was that of Chindo, Abdulrasaq and Ayinla, (2010) who conducted a research on effect of audio-visual instructional materials on junior secondary schools students' performance in Ilorin west local government area of Kwara state. That research work was similar to this research which was based on effect of the use audio-visual aids on student's academic achievement in social studies in junior secondary schools in Bauchi State. In research design, Chindo used pretest. Post test quasi-experimental design which was quite similar to the research design for this work. Chindo also employed sampled population of junior secondary schools. Students who were randomly selected for the research work. It is quite similar to the sampled population put in use for this research.

Chindo collected data through direct classroom teaching observed by various teachers employed specifically for the assignment; the scores obtained by each student

from the objectives test were used as the data for the analysis. This reach also used almost the same instrument for data collection. For statistical analysis, Chindo used inferential statistical tool of t-test for significance mean difference. This research work also used inferential statistical tools for statistical analysis. Chindo formulated the following hypotheses for his research: Chindo formulated his research's hypotheses to find out if there is no significant effect of audio-visual instructional materials on the academic achievement of junior secondary schools students in social studies.

The hypothesis formulated by Chindo was also similar the hypothesis of this research work the result of Chindo hypothesis stated that students do not perform better in social studies education when ever they are taught without the use of audio-visual instructional materials the findings of Chindo's research work was similar to the findings of this research with regards to the academic achievement of junior secondary school students in social studies education. Some of the area where differences between this research and that of Chindo's was that of is in respect of topic.

This research topic focused on the effect of the use of audio-visual aids an students on academic achievement of students in social studies in junior secondary school in Bauchi state but Chindo's work focused on the effect on of the use of audio-visual aids on students performance in Ilorin west local Government Area in Kwara state. The research design of this study was based on quasi experimental design (post test) while that of Chindo's has to do with pre test. The population of this study are four junior secondary schools from Bauchi State while Chindo's work has considered all junior secondary schools in the local government area. The sample of this work was two hundred students while Chindo's sample was only one hundred twenty students. The instrument used for this research were achievement tests, observation and interview but Chindo's used only one instrument (test) for his work. This research examined variables

such as participation, interaction and cooperation which made the work to be special compare to Chindo's work.

In another development Yusuf, (2009) carried out a research on impact of audio-visual aids in teaching of social studies in primary schools in Dass Local government area of Bauchi State. The topic of Yusuf's research tallied with that of this work as both of them focused on the impact of audio-visual aids on academic pursuit. Yusuf's in his study used the quasi-experimental design which involved one treatment group and one control group with standardized achievement tests of students to determine the effect of audio-visual aids on students performance and the same design was used in this research to determine the effect of audio-visual aids on students academic achievement.

Yusuf used all junior secondary schools students in the state as his research population while this research also used junior secondary schools students as the population. Yusuf used stratified and simple random sampling and it is similar with that of this research. Yusuf's research instrument for data collection was standardized achievement tests and it is similar instrument used for this research Yusuf used t-test statistics to test the hypothesis at alpha level of 0.05. This was also similar to that of this research work. Yusuf's formulated hypothesis for his research as there in no significant different in the mean of social studies scores of students taught using audio-visual aids and that these taught using the conventional method. This hypothesis was similar to the hypothesis of this research the deference between this work and Yusuf's work. Is the topic of the study. Yusuf's research was titled was impact of audio-visual aids in teaching primary schools in Dass Local Government Area of Bauchi State. But this study has its topic as effect of the use of audio-visual aids on students academic achievement in social studies in junior secondary schools in Bauchi state.

Yusuf used research design collect quasi experimental design with (pre-tests) while this work employed (post-test) this research used t-test and z-test for data statistical analysis while Yusuf used t-tests for data analysis of his work . This research examine variable such as participation, interaction and cooperation with made the work to special compare to Yusuf's work. In another related study, conducted by Zainab (2010) on effects of the used of audio-visual instructional materials on students performance in mathematics in senior secondary school in Kwara State. That research was similar to this study which solely focuses on effects of use of audio-visual aids on students academic achievement.

Zainab used pretest-posttest quasi experimental design which was quite similar to the research design for this work. Zainab also used 164 students as population of her study who were randomly selected for the work. It is quite similar to the population put in use for this research work. For statistical analysis, Zainab use inferential statistical tools to test the null hypotheses. In another similar research curried out by David, (2008) on impact of audio-visual instructional materials on students performance in Geography in junior secondary school in Imo State.

David in his study used quasi experimental design which involved treatment group and control group with standardized achievement tests for students to determine the impact of audio-visual materials an students performance. The research was similar to this work as both of them used quasi experimental design as well as treatment and control groups to sample the students. David used T-test statistics to test the null hypotheses. The null hypotheses for this research were tested using Z-test and U-test. Davids' work examines the impact of audio-visual materials on students performance but this research focused on students academic achievement.

Emmanuel (2010) carried out a study on effects of audio-visual aids on students academic performance in Junior secondary school in integrated science in Ogun State. In his research Emmanuel used convenience sampling technique on the population of students numbered 180.The sampling technique was similar to this work which was based on convenience sampling. Emmanuel used Z-test to test the null hypotheses as the case of this work. In his summary of major findings, Emmanuel related his comments on integrated science while this comments of this research centered in social studies particularly in junior secondary schools. In their findings, the researchers commonly highlighted that the use of audio-visual aids has tremendous impact on student's academic achievement, this assertion has in consonance with my research findings which revealed that the use of audio-visual aids has great impact on students academic achievement even through my findings further indicated the effects of comprehension, Demonstration and cooperation in the use of audio-visual aids on students academic achievement.

Summary

This Chapter reviewed the theoretical framework of the study by analyzing the. Cone of experiences as propounded by Dale, E. (1969) which classified the audio-visual aids according to their effectiveness in communicating ideas. General instructional materials were enumerated and explained how they facilitate teaching-learning process. The chapter also captured the impact of concepts such as comprehension, demonstration and cooperation on student's academic achievement through the use of audio-visual aids particularly video decoder. Finally the chapter reviewed empirical studies of some researchers: these instructional materials (audio-visuals) in teaching and learning social studies, like other subjects can effectively be taught, using Audio-visual materials that appeal sight and hearing of students in junior secondary schools.

CHAPTER THREE
RESEARCH METHODOLOGY

3.1. Introduction

This chapter deals with the methods and procedures used in collection and analyzing the data for the research. The purpose of this study is centre on the effect of Audio-visual instructional materials on students` academic achievement in junior secondary school social studies` education in Jama`are and Katagum Local Government Areas of Bauchi State. The following are the sub-headings under this chapter:-

i. Research Design

ii. Population

iii. Sample and sampling procedure

iv. Instrumentation

v. Validity and reliability of Instrument

vi. Data Gathering procedures

vii. Statistical Analysis procedure

3.2. Research Design

The research design adopted for this study was quasi-experimental design, which involved treatment group and control group. It was deemed suitable for the study because it gives room for comparison of academic achievement of students in both treatment group and control group. The study was conducted during third term of the 2013-2014 academic sessions; Six weeks were used for the study. Two junior secondary schools were considered to be treatment group and another two junior secondary schools were taken to be control group. The diagram below shows sample-post test design used for the study.

Diagram for sample-post test design.

(T) → x →	Post test
(C) → – →	Post test

3.3. Population

Bauchi State has a population of ninety-eight thousand, seven hundred and sixty five (98,765) students in junior secondary schools. Sixty thousand, three hundred and forty- two (60,342) were male students while thirty-eight thousand four hundred and twenty-three (38,423) were female students. The state also has two hundred and fifty-seven (257) social studies teachers. One hundred and fifty-four (154) were male social studies teachers and one hundred and three (103) were female social studies teachers. The table below shows the population of students and social studies teachers in the state.

Table 3.4.1 the population of students and social l studies teachers in Bauchi State

Gender	Students	Social studies teachers
Male	60, 347	154
Female	38, 423	103
Total	98, 765	257

3.4. Sample and Sampling Procedure

In order to ensure that every junior secondary school has equal chance of being selected for the study. The researcher adopted random sampling to select two (2) junior secondary schools from Jama'are Local Government Area and two junior secondary schools from Katagum Local Government Area. The tables below show sampled schools and classes for the study in both Jama'are and Katagum Local Government Area.

Table 3.4.2: sampled schools and classes for study in Jama'are Local Government Area

School	Class	Students		Total
		Male	Female	
Ahmad Muh'd wabi III Upper Basic Sec. Sch. Jama'are	J.S.S IA	29	15	44
Hassan Muh'd Upper Basic Sec. Sch. Jama'are	J.S.S IA	27	13	40
Total		56	28	84

Table 3.4.3: sampled schools and classes for study in Katagum Local Government Area.

School	Class	Students		Total
		Male	Female	
Baba Kafinta Upper Basic Sec. Sch. Azare	JS.S IA	23	17	40
Umar Faruq Upper Basic Sec. Sch. Azare	J.S.S IA	21	19	40
Total		44	36	80

3.5. Instrumentation

The instruments used by the researcher for data collection were teacher-made achievement tests, observation techniques and interview, so as to elicit the necessary responses in determining the concern of the study. Achievement tests were conducted every two weeks in both treatment and control groups. Observation techniques were also adopted to record the behavior of the students during lessons. Interview was conducted to sub-groups from both treatment and control groups to assess the level of cooperation of the students.

3.5.1. Validity

The face and content validity of the instrument is determined by expert opinions comprising two senior lecturers and two principal lecturers from school of education, College of Education, Azare. Their comment improved the item structure and format.

The validity and reliability of the instruments were determined through pilot studies in junior secondary school College of Education, Azare.

3.5.2. Reliability

The reliability co-efficient of the three instrument namely achievement test, observation and interview was at the level of significance 0.05, 0.07 and 0.05 respectively. The split half method of estimating reliability was adopted to test 50 students to obtain the co-efficient of the three instruments.

3.6. Data Gathering Procedures

The researcher visited the four (4) junior secondary schools selected for the study in Jama'are and Katagum local Government areas, where he briefed and sought permission and cooperation of the school's management to conduct the experiment. Fortunately, the researcher was granted permission to carry out the study. Two class teachers from each local government were engaged to serve as observers during teaching-learning process and they were expected to observe and record student's behavior towards various teaching-learning activities presented by the teacher (researcher). Thereafter, intensive teaching commenced in the four (4) selected schools. One school from each local government area was selected to be treatment group, where the experiment took place using video decoder to show documented and educational cassette on man and his physical environment and Greetings in Hausa, Ibo and Yaroba tribes. The remain one school from each local government was considered as control group where teacher (researcher) used chalk-talk teaching process. The classes used as sample in each school was J.S.S one A. The teaching (experiment) lasted for six (6) weeks and every two (2) weeks there was a teacher-made achievement tests for both treatment group and control group and the tests were marked and the scores of every student's in the two (2) groups were appropriately recorded for the study.

3.7. Statistical Analysis Procedure

The method for data analysis for the scores of achievement tests conducted for six weeks was descriptive statistics (percentage). This was due to the fact that the researcher wants to find out the percentage of scores of students passed the tests as well as those students failed the tests in both treatment and control group and make appropriate decision on their level comprehension. To analyze the null hypotheses accurately, the researcher used inferential statistics such as Z-test to compare the mean scores of treatment and control groups in order to determine the extent of students' comprehension in the use of audio-visual aids and used U-test to compare the mean cooperation scores of sub-groups under both treatment and control groups. It was based on this analysis, the researcher compared the calculated values with critical values and made appropriate decision on null hypotheses.

CHAPTER FOUR

RESULTS AND DISCUSSIONS

4.1. Introduction

This chapter provides detail information, data analysis and discussions of research results carried out on effect of the use of audio-visual on student's academic achievement in social studies in junior secondary school in Bauchi State.

4.2. Data analysis

Research Question One

To what extent does comprehension of students taught social studies using audio-visual aids differ from that of those taught the subject using chalk and talk teaching process?

Answer: The result indicates that comprehension of students taught social studies using audio-visual aids was higher than that of those taught using chalk and talk teaching process.

Hypothesis One

There is no significant difference between comprehension of students taught social studies using audio-visual aids and that of those taught the subject using chalk and talk teaching process.

The data collected from the achievement tests given to students on bi-weekly basis for six weeks were analyzed by converting the scores to percentage with the aim of *finding the number of students passed the tests or otherwise.*

Table 4.1.: Number of students passed/failed the tests in treatment group (post test)

Grade	1st Test	2nd Test	3rd Test	Total
Pass	71	74	73	218
Fail	13	10	11	34
Total	84	84	84	252

The result in table 4.2.1 revealed that eighty one (71) students passed the first test and thirteen (13) failed. In the second test seventy four (74) passed the test while ten (10) students failed. In the third test seventy three (73) students passed the test and eleven (11) students failed. The researcher also used the same questions for control group achievement tests on bi-weekly basis for six weeks and then the result was converted to percentage like that of treatment group.

Table 4.2.: Number of students passed/failed the tests in control group (post test)

Grade	1st Test	2nd Test	3rd Test	Total
Pass	46	57	54	157
Fail	34	23	26	84
Total	80	80	80	240

The result in table 4.2.2 indicated that forty six (46) students passed the first test and thirty four (34) students failed the test. In second test, fifty seven (57) students passed the test while twenty three (23) failed it. In the third test, fifty four (54) students passed the test and twenty six (26) failed the test.

Going by the above results in treatment and control groups it is obviously clear that students in treatment group performed better than students in control group because the number of students passed the tests in treatment group was greater than number of students passed the tests in control group. Therefore, it is pertinent to say that the use of audio-visual aids has significant impact on student's academic achievement in social studies in junior secondary.

Research Question Two

To what extent does Demonstration of students taught social studies using audio-visual aids differ from that of those taught the subject using chalk and talk teaching process?

Answer:- The findings show that Demonstration of students taught social studies using audio-visual aids was more significant than that of those taught the subject using chalk and talk teaching process.

Hypothesis Two

There is no significant difference between Demonstration of students taught social studies using audio-visual aids and that of those taught the subject using chalk and talk teaching process.

The table below shows the result of numeral rating scale for observing students Demonstration in the class. The scores were subjected to Z-test.

Table 4.2.1: comparison of the post test mean scores of treatment and control groups

Group	Mean	SD	N	standard error	Z-cal	Z-crit
Treatment	7.69	1.90	84	0.292	3.97	1.96
Control	6.53	1.83	80			

Z-cal= calculated Z-value

Z-crit = critical (or table) Z-value

Table shows mean Demonstration scores of treatment and control groups in which were 7.69, 6.53 and stand deviation of 1.90, 1.83 respectively. The Z-calculated value was 3.97 and Z-critical value was 1.96 at the 0.05 level of significance. This indicates that Demonstration of students in treatment group was higher than that of control group. Therefore, there is significant difference between Demonstration of students taught social studies using audio-visual aids and that of those taught subject using chalk and talk teaching process.

in junior secondary schools.

Research Question three

To what extent does cooperation of students taught social studies differ from that of those taught subject using chalk and talk teaching process?

Answer:- The result indicates that cooperation of students taught social studies using audio-visual aids was more impressive than that of those taught the subject using chalk and talk teaching process.

Hypothesis Three

There is no significant difference between cooperation of students taught social studies using audio-visual aids and that of those taught the subject using chalk and talk teaching process.

Table 4.2.2: shows U-test comparison of the post test mean cooperation scores of treatment and control groups.

Treatment Group		Control Group		Value	
Sub-group	Scores	Sub-group	Scores	U-cal	U-crit
1	11	1	15	2.26	1.96
2	14	2	12		
3	19	3	4		
4	16	4	17		
5	18	5	9		
6	12	6	10		
7	15	7	8		
8	17	8	6		

From table 4.2.6 the calculated U-test value is 2.26 while critical U-test value is 1.96 at 0.05 level of significance. This shows that the cooperation of student's in treatment group is greater than that of those in control group.

Therefore, there is significant difference between cooperation of students taught social studies using audio-visual aids and that of those taught the subject using conventional method.

4.3. Major Findings

The following are the highlights of the findings:-

i) The achievement tests conducted revealed that comprehension of students taught social studies use audio-visual aids was more effective than that of those taught using chalk and talk teaching process.

ii) Demonstration of students taught social studies by using audio-visual aids was higher than that of those taught using chalk and talk teaching process.

iii) Cooperation of students taught social studies using audio-visual aids was more impressive than that of those taught using chalk and talk teaching process. Therefore, there is significant difference in terms of comprehension and demonstration and cooperation between students taught social studies using audio-visual aids and that of those taught the subject using chalk and talk teaching process.

4.4. Contribution to knowledge

i) The work serves as a reference to students and teachers alike who wish to embark on further research on effects of the use of audio-visual aids on students' academic achievement

ii) The study shines light on the impact of participation, interaction and cooperation in the use of audio-visual aids in teaching-learning process.

iii) The research discusses the general instructional materials use to promote teaching-learning process. Such as categories of instructional materials and resources namely reading materials, audio-visual materials, community resources and human resources among others.

iv) The work elucidates the concepts of Comprehension and Demonstration and Cooperation in teaching learning process.

v) The work highlights the appropriate materials of teaching social studies and related subjects which will bring about students' interest and active participation

4.5. Discussions of the Findings

Generally, the findings of the study revealed the effect of the use of audio-visual aids on students' academic achievement in social studies in junior secondary schools. For instance, going by the results of achievement tests conducted on bi-weekly basis for six weeks showed that the students in treatment group scored higher marks than students in control group. This may be attributed to the fact that the students in treatment group were exposed to the use of audio-visual aids. Therefore, gained a better insight into the topics being taught than students in control group who exposed to chalk and talk teaching process. This clearly indicated that the use of audio-visual aids has significant effect on student's academic achievement. This result is not surprising because it is consistent with David, (2008) earlier argument in favour of audio-visual aids. Her argument came from Gestalt theoretical consideration which emphasized that learning takes place faster when the whole situation in question is perceived. The theoretical consideration of the gestaltists is also in consonance with Emmanuel (2010) views that audio-visual aids enable students to relate parts of the topic to whole and come to understand how context clues help to determine the best word choice that facilitate understanding.

Hypothesis one (1) which stated that there is no significant difference between comprehension of students taught social studies using audio-visual aids and that of those taught the subject using chalk and talk teaching process. The result revealed that the comprehension of students in treatment was higher than that of students in control group. This means that there was significant difference between the comprehension of students in treatment group and that of those in control group. Therefore, the null hypothesis was rejected.

Hypothesis two (2) indicated that there is no difference between demonstration of students taught social studies using audio-visual aids and that of those taught the subject

using chalk and talk teaching process. The result showed that demonstration of students in treatment group was higher and more impressive than that of those in control group. This implies that there was significant difference in terms of demonstration of students in treatment and that of control group. Thus, the null hypothesis was rejected.

Hypothesis three (3) It is stated that there is no significant difference between cooperation of students taught social studies using audio-visual aids and that of those taught the subject using chalk and talk teaching process. The result indicated that cooperation of students in treatment group was greatly higher then that of control group. This implies that there was significant difference between cooperation of students in treatment group and that of students in control group. Therefore, it is pertinent at this point to say that the classroom interaction that took place in this study has revealed that as we use audio-visual aids, we can recognize in the actions of others new ways of teaching social studies to understand the subject matter or to improve on our interaction ability. This implies as identified by Holzkamp (1991) that participation in the use of audio-visual aids is co-extensive with learning and with experience that our own actions are only a sub-test of possible (pedagogical) actions. This study therefore, posits that by participating in new forms of activities due to the use of audio-visual aids, every student and teacher had the opportunity of active participation which invariably increased individual's action potential. Further still, subject matter and pedagogical became topic of analysis during teaching-learning process. This has its primary goal, the improvement of teaching and learning social studies for the students and teachers. Similarly the use of audio-visual aids set-up a zone proximal development by creating new forms of understanding social studies pedagogy, which individuals can subsequently make a property for self (Roth et at, 2002). This study has therefore, unfolded the means through which fresh understanding of teaching and learning of social studies can be made

possible as well as ways to approach the professional development of social studies teachers.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1. Introduction

This chapter presents the summary and conclusion of the results relating to the research questions postulated and hypotheses tested. It also gives general recommendations as to how the findings of the research can enhance academic achievement and make suggestions for further research.

5.2. Summary

The study investigated the effect of the use of audio-visual aids on student's academic achievement in social studies in junior secondary schools. It focused on the influence of variables such as comprehension and demonstration and cooperation on academic achievement of students taught social studies using audio-visual aids. In the course of the work, three research questions and three hypotheses were formulated to guide the study. The data for the study was collected through achievement tests, interview and observation. On the whole four schools were purposively selected. Two schools from Jama'are Local Government and another two schools from Katagum Local Government of Bauchi State. Forty (40) students were sampled from each school for the study. The method for data analysis in this study was descriptive statistics such as frequency distribution, mean, standard deviation and simple percentage and inferential statistics such as Z-test and U-test. Generally, the result of the analysis showed that the use audio-visual aids have significant impact on students' academic achievement in social studies in junior secondary schools.

5.3. Conclusions

From the study conducted the use of audio-visual aids seemed to be an innovation and radical approach in teaching social studies because most of the social studies teachers in the schools have never used any audio-visual aids in their classes due to non-

availability of the materials where the materials are available the teachers lack the techniques in using them during teaching-learning processes. Lack or inadequate source of power is a great hindrance to effective use of these instructional materials in most of the schools.

It is evident from the study, that some of the teachers handle social studies were teachers of Geography, History, Economics or Government. Looking at the importance of the subject there some concepts or topics in the syllabus which those that are not experts cannot understand, not to talk of taking the pains in providing audio-visual aids. The way an expert in social studies presents a lesson is quite different from the way a geography teacher presents. Some students get confused or distorted and lack of knowledge of what were audio-visual aids as they have never seen any one before. However, what were commonly seen or known were chalk boards, text books, maps, pictures among others.

It was in view of this, that the study hoped to make certain recommendations and suggestions to remedy the situation, if social studies is to enjoy its status among the subjects in the curriculum, and if it is to enjoy the support and interest of the students.

5.4. Recommendations

In the light of the findings in this study, the following recommendations are made

i) There is ardent need for government and state holders to provide audio-visual aids in the schools to facilitate teaching-learning process.

ii) There is compelling need to secure a stable source of power in the schools to ensure sustainable use the instructional materials particularly audio-visual aids.

iii) The school's management and parent's teacher's association (PTA) should look into the possibility of repairing broken down instructional materials (audio-visual aids) in the schools with a view to reactivate them.

iv) There is the need to review the NCE curriculum for social studies to incorporate a course that entails techniques of operating audio-visual aids so as to train prospective social studies teachers how to use the materials effectively.

v) There is the immediate need for ministry of education to organize seminars, conferences and workshops to sensitize social studies teachers on how to use audio-visual aids in teaching-learning process.

5.5. Suggestions for further studies

At this juncture, the researcher would like point out that the study was limited to few junior secondary schools in the state due to certain factors:- such as time, fiancé and human constraints to mention but a few. In this regard, the researcher advanced the following suggestions for further studies:-

i) Future research on a similar topic should endeavour to cover all junior secondary schools in the state so as to have broader feature of the effect of the use of audio-visual aids on students in social studies.

ii) A similar research should be expanded to cover a wide range of subjects more than one used for this study.

iii) A similar study should also be conducted in primary school levels since we want to have effective teaching of the subject right from grass root.

iv) Finally, the researcher suggests the conduct of similar research in other states of the federation.

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APPENDIX A

(COMPREHENSION)

ACHIEVEMENT TEST'S QUESTIONS

FIRST TEST FOR TREATMENT AND CONTROL GROUPS.

Multiple Choice Objective Questions

Instruction: choose the correct answer to each question from option A-D
Each question carries one (1) mark

Time: 30 minutes

1. All these are components of physical environment except.

(a) Climate (b) Vegetation (c) family (d) high lands.

2. The thermometer is to temperature as ……..is to humidity.

(a) Ammeter (b) voltmeter (c). barometer (d). hydrometer.

3. Harmattan is other wise known as ……..……. Wind in Nigeria.

(a). mouson (b. summer c. south-east d. North-east

4. Which of the following is not a mineral resource.

(a) Gold (b) Timber (c) silver (d) diamond

5. The elements of weather include all the following except.

(a) Temperature (b) Sunshine (c). Cloud (d). Soil

Completion Objective Questions

complete the following statements by using the correct options.

6. The Memphis of Egypt claimed that the earth was created by path from ……..……..

(a). Water (b). Mud (c) Sand (d) Clay

7.Mountainshills valleys and rivers are classified under

……..feature.

(a) Physical (b) Climatic (c) Environmental (d) Artificial

8. The movement of the earth on its axis is known as …….…….

(a) Rotation (b) Revolution (c) Axis movement (d) Eclipse

9. A large body of water surrounded by land is…….…….. …… (a) Lake (b) Ocean (c) High Land (d) Fertile land

10. The instrument used in measuring rainfall is …….……. (a) Rainbow (b) Barometer (c) Raingauge (d) Wind value

Matching Objective Questions

Instruction: Match the items in column A with the items in column B.

Column A	Column B
Climatic elements	Instrument for measuring the unlimited element
11. Temperature	Shadow
12. Rainfall	Hydrometer
13. Sunshine	Wind value
14. Humidity	Thermometer
15.. Wind	Rainguage

MARKING SCHEME FOR FIRST TEST IN TREATMENT AND CONTROL GROUPS

Answers for Multiple Choice Objective Questions

1. c

2. d

3. b

4. b

5. d

Answers for Completion Objective Questions

6. b

7. a

8. d

9. a

10. c

Answers for Matching Objective Questions

11. Temperature …….. Thermometer

12. Rainfall ……..……. Rangauge

13. Sunshine ……..….. Shadow stick

14. Humidity …….Hydrometer

15. Wind……Wind value

SECOND TEST FOR TREATMENT AND CONTROL GROUPS.

Multiple Choice Objective Questions

Instruction: Choose the correct answer to each question from option A-D.
Each question carries one (1) mark

Time: 30 minutes

1. The average weather condition of a place over a number of years is ……... (a) Humidity (b) Temperature (c) Weather (d) Climate

2. A large body of water surrounded by land is……..…… (a) Lake (b) Ocean (c) Highland (d) forest

3. The physical feature of a place include the following except

(a) Mountain (b) Building (c) Low Lands (d) river

4. Related humidity can be defined as

(a) The amount of water with atmosphere (b) The dew point (c) The dryness of an area (d) The coldness of an area

5. The largest and deepest ocean in the world is……..…….

(a) Atlantic ocean (b) India Ocean (c) Pacific Ocean (d) Arctic Ocean

Complete Objective Questions

Instruction: Complete the following statements by writing the correct words.

6. Weather records are observed…….……

7. Barometer is used to measure…….

8. Summer wind is other wise known as…….……

9. The sun rises in the …….…….. in Nigeria

10. River Niger and River Benue meet at ……..……..

Matching Objective Questions

Instruction: match the items in column A. with the items in column B.

Column A.	Column B.
Minerals	Location
11. Coal	Benue State
12. Columbite	Bauchi State
13. Gold	Oyo
14. Limestone	Ogun State
15. Tin ore	Plateau State

MARKING SCHEME FOR SECOND TEST IN TREATMENT AND CONTROL GROUPS

Answers for Multiple Choice Objective Questions

1.d

2.a

3. b

4. a

5. c

Answers for Completion Objective Questions

6. Barometer

7. Weather

8. Harmattan

9. West

10. Bussa

Answers for Matching Objective Questions

11. Coal ……Benue

12. Columbite……..…. Bauchi

13. Gold……..Oyo

14. Limestone ……..…..Ogun

15. Tin ore……..Plateau

THIRD TEST FOR TREATMENT AND CONTROL GROUPS

Multiple Choice Objective Questions

Instruction: Choose the correct answer to each question from option A-D
Each question carries one (1) mark

Time: 30 minutes

1. Nigeria moved from left to right hand-driving in the year……

(a) 1960 (b) 1963 (c) 1970 (d) 1972

2. One of the following is known for its ability to take the passengers to their destination.

(a) Road transport (b) Rain transport (c) Air transport (d) water transport

3. Which is the name given to man-made water ways to improve water transportation?

(a) Navigation (b) inland water ways (c) water ways (d) canals

4. Railways transport is useful in the following states except

(a) Delta (b) Oyo (c) Kaduna (d) Rivers

5. Which of the following means of transportation is man's greatest invention?

(a) Aero plane (b) ship (c) cars (d) Trans

Complete Objective Questions

Instruction: complete the following statements by writing the correct words

6. The fastest passengers aircraft in the word today is called……...

7. Dual carriage ways built in Nigeria is known as……...

8. Goods brought from another country into your own are said to be ……

9. The movement agricultural products from the north to the southern parts of Nigeria is usually in ……..……

10. ……..…….are used to transport mineral resources only.

Matching Objective Questions

Instruction: Match the items in column A with the items in column B.

Column A	Column B
11. Railway	Donkey
12. Air Transport	Train
13. Water transport	Aero plane
14. Road transport	Ship
15. Old Transport	Lorry

MARKING SCHEME FOR THIRD TEST IN TREATMENT AND CONTROL GROUPS

Answers for Multiple Choice Objective Questions

1. d

2. a

3. a

4. d

5. d

Answers for Completion Objective Questions

6. Concorde

7. Express way

8. Imported

9. Lorries

10. Pipe way

Answers for Matching Objective Questions

11. Rail way transport …….. Train

12. Air transport…….….Aero plane

13. Water transport …….….ship

14. Road transport……lorry

15. Old transport……. Donkey

APPENDIX B

RECORDS OF STUDENT'S DEMONSTRATION AND COOPERATION IN CLASS ACTIVITIES

ACTIVITIES TO BE OBSERVED IN THE CLASS FOR STUDENTS' DEMONSTRATION

1. Student's to demonstrate how greeting is performed in Hausa Land.

2. to demonstrate how greeting is performed in Ibo Land.

3. to demonstrate how greeting is performed in Yaroba Land.

NUMERICAL RATING SCALE FOR OBSERVATION STUDENTS DEMONSTRATION IN TREATMENT GROUP

	2	3	4	5	6	7	8	9	10	11	12	13	14	Total
1	-	-	-	-	-	-	-	-	-	-	-	-	-	0
2	1	-	-	1	-	-	1	1	1	-	1	-	-	6
3	1	-	-	-	-	-	-	-	1	-	-	-	-	2
4	-	-	-	-	-	-	-	-	-	-	-	-	-	0
5	1	-	-	-	1	-	-	1	-	-	-	-	1	4
6	-	-	-	-	-	-	-	-	-	-	-	-	-	0
7	-	1	-	-	-	-	-	-	-	1	-	-	-	2
8	1	-	-	1	-	-	-	-	1	-	-	-	1	4
9	-	-	-	-	-	-	-	-	-	-	-	-	-	0
10	1	-	-	-	1	-	-	-	-	-	-	-	-	2
11	1	-	-	1	-	1	-	1	-	1	-	-	1	6
12	1	1	-	-	-	1	1	-	1	-	1	1	1	8
13	-	-	-	-	-	-	-	1	-	-	-	-	1	2
14	1	-	-	-	1	-	-	1	-	1	-	1	1	6
15	1	-	-	-	-	-	1	-	-	-	-	-	-	2
16	1	-	-	-	1	-	-	-	-	1	-	-	1	4
17	-	-	-	-	-	-	-	-	-	-	-	-	-	0
18	1	-	-	-	1	-	1	1	-	-	1	1	-	6
19	-	-	-	1	-	-	-	-	-	-	-	-	1	2
20	-	-	1	1	1	1	1	-	1	1	1	1	1	10
21	1	-	1	-	-	1	1	1	-	1	-	1	1	8
22	-	-	-	-	-	-	-	-	-	-	-	-	-	0
23	1	-	-	1	-	1	-	-	1	-	1	-	1	6
24	-	1	-	1	1	1	-	-	-	1	1	1	1	8
25	-	-	-	-	-	1-	-	-	-	-	-	1	-	2
26	1	1	1	-	1	1	1	-	1	1	1	-	1	10
27	-	-	-	-	-	-	-	-	-	-	-	-	-	0
28	1	-	1	-	-	1	1	1	-	-	1	1	1	8
29	1	1	1	1	1	-	1	1	1	1	1	1	1	12
30	-	-	-	-	-	-	-	1	-	1	-	-	-	2

31	1	1	1	1	-	1	-	1	-	1	1	1	1	10
32	1	-	-	-	1	1	-	-	-	-	1	1	1	6
33	-	-	-	1	-	-	-	1	-	1	-	-	-	4
34	1	1	-	1	1	1	1	-	1	1	1	-	1	10
35	1	1	-	-	1	-	1	1	-	-	1	1	1	8
36	-	1	1	1	1	1	1	1	1	1	1	1	1	12
37	-	-	-	-	1	-	-	-	-	1	-	1	1	4
38	1	1	-	-	-	1	1	1	-	-	1	1	1	8
39	1	1	1	-	1	1	1	-	1	1	1	-	1	10
40	-	-	-	1	-	1	-	-	-	1	-	1	-	4
41	1	1	1	-	-	1	1	1	1	1	1	-	1	10
42	-	-	1	-	1	-	1	1	-	1	-	1	-	6
43	1	1	1	1	1	-	1	1	1	1	1	1	1	12
44	1	1	1	-	-	-	1	-	1	-	1	1	1	8
45	1	1	1	1	1	1	1	1	1	1	1	1	1	14
46	-	1	-	-	-	1	1	-	-	1	1	-	1	6
47	1	1	1	1	1	1	1	1	1	1	1	1	1	14
48	1	1	1	-	1	1	1	-	1	1	1	-	1	10
49	1	1	1	1	1	1	1	1	1	1	1	1	-	12
50	1	1	1	1	1	1	1	1	1	1	1	1	1	14
51	1	-	1	-	1	1	1	-	-	1	1	-	1	8
52	1	1	1	1	1	1	1	1	1	1	1	1	1	14
53	1	1	1	-	1	-	1	-	1	1	1	1	1	10
54	1	1	1	1	1	1	1	-	1	1	1	1	1	12
55	1	1	1	1	1	1	1	1	1	1	1	1	1	14
56	1	1	-	-	-	-	1	1	-	-	1	-	1	6
57	1	1	1	1	1	-	-	-	1	1	1	1	1	10
58	1	1	1	1	1	1	1	1	1	1	1	1	1	14
59	1	-	1	-	1	-	1	-	1	-	1	1	1	8
60	-	1	1	1	1	1	-	1	1	1	1	-	1	10
61	1	1	1	1	1	1	1	1	1	1	1	1	1	14
62	1	1	1	1	1	1	1	1	1	1	-	1	1	12
63	-	1	-	1-	1	-	1	-	1	-	1	1	1	8
64	-	1	1	-	1	1	1	1	1	-	1	1	1	10
65	1	1	1	1	1	1	1	1	1	1	1	1	1	14
66	-	1	1	1	-	-	-	1	-	1	1	1	1	8
67	1	1	1	1	1	1	-	1	1	1	1	1	1	12
68	1	1	1	1	1	1	1	1	1	1	1	1	1	14
69	1	1	1	-	-	-	1	1	1	-	-	1	1	8
70	1	1	1	1	1	1	1	1	1	1	1	1	1	14
71	-	-	-	1	1	1	1	1	1	1	1	1	1	10
72	1	1	1	1	1	1	1	1	1	1	1	1	1	14
73	1	-	-	1	-	-	-	1	-	-	-	1	-	4
74	1	1	1	1	1	-	1	1	1	1	1	1	1	12
75	1	1	-	-	1	1	-	-	1	1	-	1	1	8
76	1	1	1	1	1	1	1	1	1	1	1	1	1	14
77	1	-	-	1	-	1	1	1	1	1	1	1	1	10
78	-	-	-	1	-	-	-	1	-	1	-	-	1	4

79	-	-	1	1	1	-	-	-	1	1	1	1	1	8
80	1	-	-	-	-	1	-	-	-	1	-	-	1	4
81	1	1	1	1	1	1	-	1	1	1	1	1	1	12
82	1	-	-	1	1	1	-	1	-	1	1	1	-	8
83	1	1	1	1	1	1	-	-	1	1	-	1	1	10
84	1	-	-	1	-	1	-	-	-	1	-	-	-	4

NUMERICAL RATING SCALE FOR OBSERVATION OF STUDENTS

DEMONSTRATION IN CONTROL GROUP

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	TOTAL
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
2	-	-	-	1	-	-	1	-	-	-	-	-	-	-	2
3	1	1	-	-	-	-	-	1	-	1	-	-	-	-	4
4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
5	1	1	-	-	-	-	-	-	1	1	-	-	1	1	6
6	-	-	-	-	-	-	-	-	1	1	-	-	-	-	2
7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
8	-	1	-	-	1	-	1	-	-	-	-	1	-	-	4
9	-	-	-	-	-	1	-	-	-	1	-	-	-	-	2
10	1	1	-	-	-	-	-	1	-	1	-	1	-	1	6
11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
12	-	-	1	-	-	-	1	-	-	-	1	-	1	-	4
13	-	-	-	-	-	1	-	-	-	-	-	-	-	1	2
14	1	-	-	1	1	-	-	1	1	-	-	-	-	1	6
15	-	-	1	-	-	-	-	-	-	-	-	1	1	1	4
16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
17	1	1	1	1	1	1	1	1	1	1	1	1	1	1	14
18	-	-	-	-	1	-	-	-	-	1	-	-	-	-	2
19	1	1	1	1	1	-	1	1	1	1	1	1	1	-	12
20	-	-	-	-	-	-	-	-	-	-	1	1	1	1	4
21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
22	-	-	-	1	1	1	-	-	1	1	-	1	1	1	8
23	-	-	-	-	-	-	1	-	-	-	-	1	-	-	2
24	1	1	1	-	-	-	-	-	-	-	-	-	-	1	4
25	-	-	-	1	1	1	-	-	1	1	-	1	1	1	8
26	-	-	-	-	-	1	-	-	-	1	-	-	-	-	2
27	-	-	-1	1	-	-	-	1	1	-	-	1	1	-	6
28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
29	-	-	-	1	1	1	-	-	1	1	-	1	1	1	8
30	-	-	-	-	-	1	-	-	1	-	-	-	1	1	4
31	-	-	-	1	1	1	-	-	1	1	-	1	1	1	8
32	-	-	1	-	-	-	-	-	-	-	-	-	-	1	2
33	-	-	-	1	1	1	-	-	1	1	-	1	1	1	8
34	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
35	1	1	1	-	-	-	-	1	-	-	1	-	1	-	6
36	-	-	-	-	1	-	-	-	-	1	-	-	-	-	2
37	-	-	-	1	-	-	-	-	-	1	-	-	-	-	2
38	-	-	-	1	1	1	1	-	-	-	-	-	-	-	4
39	-	-	-	1	1	1	-	-	1	1	-	1	1	1	8
40	1	1	1	1	-	-	1	1	1	1	-	1	-	1	10
41	-	-	-	1	1	1	-	-	1	1	-	1	1	1	8
42	1	1	-	-	-	-	1	-	-	-	-	-	-	1	4
43	1	1	1	1	-	-	1	1	1	1	-	1	-	1	10
44	-	-	-	1	1	1	-	-	1	1	-	1	1	1	8

45	1	-	-	-	1	-	-	-	-	1	-	-	-	1	4
46	1	1	1	1	-	-	1	1	1	1	-	1	-	1	10
47	-	-	-	1	1	1	-	-	1	1	-	1	1	1	8
48	1	1	-	-	-	1	1	-	-	1	1	-	-	-	6
49	1	1	1	1	-	-	1	1	1	1	-	1	-	1	10
50	-	-	-	1	1	1	-	-	1	1	-	1	1	1	8
51	1	1	1	1	1	-	1	1	1	1	1	1	1	-	12
52	1	1	1	-	-	-	-	-	-	1	-	-	-	-	4
53	1	1	1	1	-	-	1	1	1	1	-	1	-	1	10
54	-	-	1	1	-	-	-	-	1	1	-	-	1	1	6
55	1	1	1	1	1	-	1	1	1	1	1	1	1	-	12
56	1	1	1	1	-	-	1	1	1	1	-	1	-	1	10
57	-	-	-	-	-	1	1	-	-	-	1	-	1	-	4
58	1	1	1	1	-	-	1	1	1	1	-	1	-	1	10
59	1	1	1	1	-	-	1	1	1	1	-	1	-	1	10
60	1	-	-	1	-	-	1	1	-	-	-	1	1	-	6
61	-	-	-	1	1	1	-	-	1	1	-	1	1	1	8
62	1	1	1	1	-	-	1	1	1	1	-	1	-	1	10
63	1	1	1	1	1	1	1	1	1	1	1	1	1	1	14
64	1	1	1	1	-	-	1	1	1	1	-	1	-	1	10
65	1	-	-	-	1	1	-	-	-	1	1	-	-	1	6
66	1	1	1	1	-	-	1	1	1	1	-	1	-	1	10
67	-	-	-	1	1	1	-	-	1	1	-	1	1	1	8
68	1	1	1	1	1	-	1	1	1	1	1	1	1	-	12
69	1	1	1	-	-	-	-	1	1	-	-	-	-	1	6
70	1	1	1	1	1	-	1	1	1	1	1	1	1	-	12
71	1	1	1	1	1	-	1	1	1	1	1	1	1	-	12
72	1	1	1	1	-	-	1	1	1	1	-	1	-	1	10
73	1	1	1	1	1	-	1	1	1	1	1	1	1	-	12
74	-	-	-	1	1	1	-	-	1	1	-	1	1	1	8
75	1	1	1	1	1	-	1	1	1	1	1	1	1	-	12
76	1	1	1	1	1	1	1	1	1	1	1	1	1	1	14
77	-	-	-	1	1	1	-	-	1	1	-	1	1	1	8
78	1	1	1	1	-	-	1	1	1	1	-	1	-	1	10
79	-	-	-	1	1	1	-	-	1	1	-	1	1	1	8
80	-	-	-	1	-	1	-	-	-	-	1	1	1	1	6

INTERVIEW QUESTIONS FOR STUDENTS' IN TREATMENT AND CONTROL GROUPS TO ASSESS THEIR COOPERATION IN THEIR RESPECTIVE SUB-GROUPS

GROUP A

1. What is physical environment?

2. Mention one component of physical environment

GROUP B

1. What flood?

2. Give one cause of flood

GROUP C

1. Explain the way by which man influences has environment.

Explain the way by which environment influences man

GROUP D

2. What do you understand by elemestication of animals and plants?

GROUP E

1. Define the terms forest

2. What is artificial reforestation?

GROUP G

1. What is waste land?

2. Give one example of waste land

Group H

1. What causes drought?

2. How can the problem of drought solved

GROUP I

1. What is erosion?

2. Give one cause of erosion.

GROUP G

1. What irrigation?

2. Give one function of irrigation

RECORD OF STUDENTS SCORES IN SUB-GROUPS IN TREATMENT GROUP

SUB- GROUP	SCORES OBTAINED		TOTAL
GROUP A			
1	1	0	1
2	1	1	2
3	0	0	0
4	1	1	2
5	1	1	2
6	1	0	1
7	1	0	1
8	0	0	0
9	0	0	0
10	1	1	2
TOTAL			11
GROUP B			
1	1	1	2
2	1	1	2
3	0	0	0
4	0	0	0
5	1	0	1
6	1	1	2
7	1	1	2
8	1	0	1
9	1	1	2
10	1	1	2
TOTAL			14
GROUP C			
1	1	1	2
2	1	1	2
3	1	1	2
4	0	1	1
5	1	1	2
6	1	1	2
7	1	1	2
8	1	1	2
9	1	1	2
10	1	1	2
TOTAL			19
GROUP D			
1	1	0	1
2	0	1	1
3	1	1	2
4	1	0	1
5	1	1	2
6	1	1	2
7	1	1	2
8	1	1	2
9	0	1	1

10	1	1	2
TOTAL			16
GROUP E			
1	0	1	1
2	1	1	2
3	1	1	2
4	1	1	2
5	1	1	2
6	0	1	1
7	1	1	2
8	0	1	1
9	1	1	2
10	1	0	1
TOTAL			16
GROUP F			
1	0	1	1
2	1	1	2
3	1	1	2
4	1	1	2
5	1	1	2
6	1	1	2
7	1	0	1
8	1	1	2
9	1	1	2
10	1	1	2
TOTAL			18
GROUP G			
1	0	1	1
2	1	0	1
3	1	1	2
4	1	1	2
5	1	1	2
6	0	0	0
7	1	1	2
8	1	0	1
9	0	1	1
10	0	0	0
TOTAL			12
GROUP H			
1	0	0	0
2	1	1	2
3	1	1	2
4	0	1	1
5	1	1	2
6	1	0	1
7	1	1	2
8	0	1	1
9	1	1	2

10	1	1	2
TOTAL			15
GROUP I			
1	1	1	2
2	1	0	1
3	0	1	1
4	1	1	2
5	1	1	2
6	0	1	1
7	1	1	2
8	1	1	2
9	1	1	2
10	1	1	2
TOTAL			17

RECORD OF STUDENTS SCORES IN SUB-GROUPS IN CONTROL GROUP

SUB- GROUP	SCORES OBTAINED		TOTAL
GROUP A			
1	1	1	2
2	1	0	1
3	1	1	2
4	1	0	1
5	0	1	1
6	1	1	2
7	0	0	0
8	1	1	2
9	1	1	2
10	1	1	2
TOTAL			15
GROUP B			
1	0	1	1
2	1	0	1
3	1	0	1
4	0	1	1
5	1	1	2
6	1	1	2
7	1	0	1
8	1	1	2
9	0	0	0
10	0	1	1
TOTAL			12
GROUP C			
1	1	0	1
2	0	1	1
3	0	0	0
4	0	0	0
5	1	1	2
6	0	0	0
7	0	0	0
8	0	0	0
9	0	0	0
10	0	0	0
TOTAL			4
GROUP D			
1	1	1	2
2	0	1	1
3	1	1	2
4	1	1	2
5	0	1	1
6	1	1	2
7	0	1	1
8	1	1	2
9	1	1	2
10	1	1	
TOTAL			17
GROUP E			
1	0	0	0

2	1	0	1
3	0	1	1
4	1	0	1
5	1	1	2
6	0	0	0
7	0	0	0
8	1	1	2
9	0	0	0
10	1	1	2
TOTAL			9
GROUP F			
1	1	1	2
2	0	0	0
3	1	0	1
4	0	1	1
5	1	0	1
6	1	1	2
7	0	0	0
8	1	0	1
9	0	0	0
10	1	1	2
TOTAL			10
GROUP G			
1	1	0	1
2	0	0	0
3	0	1	1
4	1	1	2
5	1	0	1
6	0	0	0
7	0	0	0
8	0	1	1
9	1	0	1
10	0	1	1
TOTAL			8
GROUP H			
1	0	0	0
2	1	0	1
3	0	1	1
4	1	0	1
5	0	1	1
6	1	0	1
7	0	0	0
8	0	0	0
9	1	0	1
10	0	0	0
TOTAL			6

APPENDIX C

THE POPULATION DISTRIBUTION OF STUDENTS AND TEACHERS IN JUNIOR SECONDARY SCHOOLS IN JAMA'ARE AND KATAGUM LOCAL GOVERNMENT AREAS.

s/n	School	Students			Teachers		
		Male	Female	Total	Male	Female	Total
1	Ahmed Muh'd Wabi III Jama'are Upper Basic	345	271	616	4	1	5
2	Dogon Jeji Upper Basic, Sec, Sch. Dogon Jeji	315	157	472	3	-	3
3	Galdimari Upper Basic, Sec, Sch. Galdimari	54	21	74	2	-	2
4	Hanafari Upper Basic, Sec, Sch. Hanafari	450	234	684	4	2	6
5	Hassan Muh'd Upper Sec, Sch. Basic, Jama'are	244	242	486	3	-	3
6	Jurara Upper Basic, Sec, Sch. Jurara	79	29	108	2	-	2
7	Kata kata Upper Basic, Sec, Sch. Kata kata	144	71	215	1	-	1
8	M.C Abubakar Upper Sec, Sch. Basic, Jama'are	298	194	492	2	2	4
9	Sabon Kafi Upper Sec, Sch. Basic, Sabon Kafi	148	85	233	2	-	2
	GRAND TOTAL	2,077	1,275	3,0352	23	5	28

s/n	School	Students			Teachers		
		Male	Female	Total	Male	Female	Total
1	Chinade Upper Basic, Sec, Sch. Chinade	372	186	558	4	2	6
2	Madara Upper Basic, Sec, Sch. Madara	388	173	561	5	2	7
3	Yayu Upper Basic, Sec, Sch. Yayu	294	153	447	3	1	4
4	Yagana Upper Basic, Sec, Sch. Azare	369	192	561	4	2	6
5	Dufuwar Kura Upper. Basic, Sec, Sch. D.Kura	157	73	230	2	1	3
6	Ragwam Upper Basic, Sec, Sch. Ragwam	149	84	233	2	-	2
7	Buskuri Upper Basic, Sec, Sch. Buskuri	186	77	263	2	-	2
8	Bidir Upper Basic, Bidir	254	108	362	1	1	2
9	Baba Kafinta Upper. Basic,	500	345	845	6	1	7

	Sec, Sch. Azare						
10	Nassawa Upper Basic, Sec, Sch. Azare	542	367	909	5	2	7
11	Bulkachuwa Upper Basic, Sec, Sch. B.	305	114	419	3	2	5
12	Kujuru Upper Basic, Sec, Sch. Kujuru	245	96	341	2	1	3
	GRAND TOTAL	3,761	1,968	5,792	39	15	54