ASSESSMENT OF AVAILABILITY AND UTILIZATION OF AUDIO AND AUDIOVISUAL TECHNOLOGIES FOR TEACHING AND LEARNING AMONG TERTIARY INSTITUTIONS IN MINNA METROPOLIS

BY

YUSUF Samuel Oluwaseyi

2015/1/58341BT

DEPARTMENT OF EDUCATIONAL TECHNOLOGY

SCHOOL OF SCIENCE AND TECHNOLOGY EDUCATION

FEDERAL UNIVERSITY OF TECHNOLOGY MINNA, NIGER STATE

BEING A RESEARCH PROJECT SUBMITTED TO THE DEPARTMENT OF EDUCTIONAL TECHNOLOGY IN PARTIAL FULFILMENT OF THE REQUIREMENT FOR THE AWARD OF BACHELOR OF TECHNOLOGY

AUGUST, 2021

ABSTRACT

The study assessed the availability and use of audio and audio-visual technologies(materials) for teaching and learning in Minna, Niger state. This study became necessary because Some school subjects which are regarded to be too tough to understand by students can be made simple, interesting and learnable if the teachers use appropriate and adequate instructional resources. But a major problem that is usually unnoticed is the non-availability and use of relevant educational resources. This study ensured reliability by Test Re-test method of data collection; this means that the questionnaires will be test twice at different times. Also the supervisor assisted in refining the instruments focusing on study, research tasks and questions. The data collected for this research work will be organized and analysed. Because the data obtained in the study are mainly descriptive, non-parametric statistical techniques such as percentage, frequencies of numbers converted into percentages, in one case mean is used as means of analysis were used in the analysis. This helped to analyze the answers to the questions in the questionnaire and draw conclusion. The results revealed that there is availability of audio and audio-visual materials in tertiary institutions in Minna Metropolis, this was contrary to the findings of Nwankwo (2004) who revealed that audio materials are not available. The following recommendations were made, Audio-visual in teaching and learning should be encouraged, Government should ensure adequate funding and provision of audio-visual materials in tertiary institution, Training of teachers, students on the use of audio-visual materials should be encouraged

TABLE OF CONTENT

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

An outstanding development in modern education is the growth and use of audio and audiovisual materials in education. Education should appeal to the mind chiefly through the visual and auditory sense organs, since it is possible that 85 percent of our learning begins at those terminal points.

A revolution in communications is under way. This revolution is generated by the rapid developments in the fields of mass communication media and instructional media such as (radio, television = audio and audiovisual technology), teaching machines and other devices that assist in teaching and learning. The introduction of these innovations into the field of education has made necessary a new evaluation of teaching methods and classroom techniques and procedures.

The new tools and teaching materials are playing a significant role in education, and teachers need to understand their potential and to learn how they can be used to maximum advantage in improving classroom instruction.

The audio and audio-visual technologies have their unique roles to play in teaching and learning situation and so must be made readily available and accessible especially at tertiary institutions. Chambers English dictionary defined the words `available' in this research work' to mean the state of being physically present, within easy reach of users. It also refers to information resources that are within the reach of users for their use, while accessibility refers to resources being effectively and independently reached and utilized. The distinction between these two terms availability and accessibility is that the former refers to the provision of the resources and the other the ability of access to get to them. Instructional resources for the classroom are available in a variety of sources.

Audiovisual materials, such as videotapes, DVDs, audio tapes, audio CDs and microforms, cannot be difficult to identify and access.

Audio visual are materials will assist teachers to make their lessons explicit to students. They are also used to transmit information, ideas and notes to learners. Audio visual materials include both visuals and audiovisuals such as pictures, flashcards, posters, charts, tape recorder, radio, video, television, computers among others. These materials serve as supplement to the normal processes of instruction.

According to Okeke(2013) visual aids are visible materials or equipment employed while teaching to aid learning. In other words, audio visual instructions simply mean the presentation of knowledge to be gained through seeing experience. According to Roberta (2014) Audio technology can make several unique contributions to the teaching-learning process: self-study for non-readers, realistic foreign language practice, stories to stimulate the imagination, and music for physical activity, to name just few. Cassettes, records, and CDs are abundantly available in every curricular area and are easy to use. To use audio media effectively requires an understanding of the hearing-listening processes and thoughtful selection of materials based on your objectives.

Audio technology has become an important part of the modern classroom. We use it in giving presentations, capturing lessons and playing music, but do you really know the full potential of incorporating classroom audio systems into your day to day teaching?

Small wireless microphones attached to audio systems allow teachers to amplify their voices above the disturbances of the classroom. Chatting children, scraping desks, passing cars and other outside noises can all pose a distraction for students. By amplifying a teacher's voice to a higher decibel, learners become more focused on what the teacher is saying. This can be especially helpful to

children sitting in the back of the class where distracting noises may almost completely cancel out the teacher's voice.

Classroom audio and visual technology is yet to be introduced into every classroom but it is start to gaining popularity because of its many benefits. For the future of the modern day classroom, adding this to your list of essentials will make sure that the classroom helps everyone from the teacher down to the last student sitting in the back row.

1.2 Statement of Research Problem

Some school subjects which are regarded to be too tough to understand by students can be made simple, interesting and learnable if the teachers use appropriate and adequate instructional resources. But a major problem that is usually unnoticed is the non-availability and use of relevant educational resources. It is unfortunate that students perform poorly in some core subjects such as Mathematics, English Language, and Physics etc in public examinations. The reasons responsible for the mass failure in these subjects according to Nwalo (2000) is usually traceable to poor teaching by teachers, lack of resources or audio-visuals and lack of seriousness on the part of the students.

1.2 Aim and Objectives of the Study

This study was designed to assess the availability and use of audio-visual resources in the colleges of education in Niger State In specific terms, the study examined,

1. The availability of audio technologies or media for teaching and learning among tertiary institution in Minna metropolis
2. The availability of audio-visual technologies or media for teaching and learning among tertiary institution in Minna metropolis

3. The use of audio technologies for teaching and learning in tertiary institutions in Minna metropolis
4. The use of audio-visual technologies for teaching and learning in tertiary institutions in Minna metropolis
5. The gender difference in the use of audio-visual technologies for teaching at tertiary institutions in Minna Metropolis.

1.4 Research Questions

1. Are audio and audio-visual technologies available for teaching and learning in tertiary institution in Minna Metropolis?

2. Are audio and audio-visual technologies available at teachers' disposal for teaching and learning in tertiary institution in Minna Metropolis?

3. Are audio technologies used for teaching and learning in tertiary institution in Minna Metropolis?

4. Are audio-visual technologies used for teaching and learning in tertiary institution in Minna Metropolis?

5. Are there any difference in the male and female use of audio and audio-visual technologies for teaching at tertiary institutions in Minna Metropolis?

1.5 Research Hypothesis

HO_1: There is no significant difference between male and female and utilization of audio and audio-visual technologies for teaching at tertiary institutions in Minna Metropolis

1.6 Significance of the Study

It is hoped that the findings of this study will go a long way to reveal the actual state of audio and audio-visual technology, material or media in the tertiary institutions in Minna metropolis.

The study will equally provide curriculum developer and policy makers with further research work on utilization (use) of audio and audio-visual materials to enhance teaching and learning at all levels of the Nigeria Education system. When the use of audio-visual materials is encouraged, there will definitely by a high demand for the materials and the producers will put in more efforts in the production and even come out with more methods of applying them to teaching and learning. The result could serve as an eye opener to both the government and non-governmental organization that can be involved in solving problems that may be identified, militating against the effective and efficient utilization and also made available the necessary resources. Furthermore, the educational technologists, libraries and resources centers would be sensitized to the need to engage in improvisation and production of these resources for the colleges they are situated. Finally, the research will also pave the way for research into other areas of concern and interest and will give researchers insight into this topic of investigation.

1.7 Scope of the Study

This study is limited to tertiary institution in Minna metropolis of Niger state, but the results of this study can also be used to rectify and aid the use of audio and audio-visual material of technology in other institutions. This research is also limited to higher institutions that have access to use of audio and audio-visual materials in teaching and learning in Minna metropolis of Niger state.

1.8 Definition of Major Terms

Audio and audio-visual technology in this context simply means audio and audiovisual materials and their equipment for use. This term is usually interchangeably used, audio visual technology, audio visual material or media

Audio Materials; Audio materials, media or technology refers to materials that appeal to the human sense of hearing such as radio, audio tape/cassette, record player, cell phone walkie talkie etc.

Audio-Visual Materials; Audio-visual media, material or technology appeals to the human senses of hearing and sight simultaneously, examples are videotape, television broadcasting, streaming video, VCD, DVD.

Assessment; Assessment is the systematic basis for making inferences about the learning and development of student, it is the process of defining, selecting, collecting, analyzing, interpreting and using information to increase students learning and development

Availability; this is the state of being available, the noun availability indicates that something is easily obtainable and ready to use

Use (utilization); put to action or service

CHAPTER TWO

REVIEW OF RELATED LITERATURE

2.1 Introduction

This chapter will be reviewed under the following sub-headings: Conceptual framework, Theoretical framework Empirical studies, Summary of Literature Reviewed, Conclusion

2.2 Conceptual framework

2.2.1 Concept of audio and audio-visual material, media or technology

Audio media; this refers to a form of media communication that uses audio or voice recording as a medium in the delivery of information

Audio as it name implies has to do with sound, audio material are materials that appeal to human sense of hearing. Sound is produced through vibrations that set into motion radiating waves of compression and rarefaction propagated through a range of medias.

Hearing occurs when these vibrations are received and processed by the ear and sent to the brain by the auditory nerve.

Audio-visual media; Audio-visual is an electronic media processing both a sound and a visual component, it appeals to both human sense of hearing and sight simultaneously

Using audio-visual aids and other technologies developed in this modern scientific era for the purpose of achieving concrete education proves beneficial for teacher and student and educational system as whole

2.2.2 Classification of educational media

There are many ways of classifying educational media, they may be perceived according to the levels of technology, example: low level or high level technology. They may also be grouped according to the senses they stimulate. Visual media, audio media and audio visual media, or classified as projected and non projected media, they can further classified as printed and non printed media etc, in fact, there is no rigid form of classification.

Audio visual technology concerns itself with the use of equipment (hardware and materials and software in the extension of teaching and learning process, such materials include:

Projected media e.g. films, filmstrips etc

Broadcast and telecommunication media e.g. radio, television,

Computer teaching machines

Printed materials e.g. journals, textbooks, handouts etc

Non-projected cards e.g. chalkboards, adhesives, flannel graph

Pictorial cards e.g. charts, photographs

Olagunju (2008) presented a clear and descriptive example of a way in which educational media may be classified.

Non-printed material: this include non projected material like hardware and software they need no projection and does not require light sources such include pictures diagram models realia chats

Print media: they include all texture material such as textbooks, bulletin, journal and newspaper

Electronic media: these include: computer,16mm films,8mm films transparency, slides overhead projector, opaque projector.

Projected: These are material that require light source for projection of material e.g filmstrips, slides motion pictures

Non projected material: these are material which no projection or any electric power examples are realia, models, mockups, diagram, charts.

2.2.3 Use of audio visual materials/aids

Audio visual aids or instructional material are different forms of information carriers which are used to record store pressure transmit or retrieve information for information for the purpose of teaching and learning. They also transmit information in such a fashion that will modify the attitude habits and practices of students, in general way, audio visual facilitate learning. We will examine how some of these aids are used to enhance learning on the broadcast media.

Okpala (1999) noted that if Audio-Visual materials are properly utilized, they will enable the teachers to achieve the following;

a) Reduce verbalization

b) Humanized and utilized the subject matter

c) Stimulate self-activity, make new topic interesting

d) Supply concrete basic conceptual thinking

e) Increase ability of retention

f) Develop keen observation

g) Foster creative imagination

Oyedele (2004) emphasized that in everywhere, teachers need to make the fullest use of resource materials (audio and audiovisual). She noted that one of the reasons why available materials are not used by many teachers in schools is that the teachers lack the necessary skills to operate them.

Using audio and audio-visual aids and other technologies developed in this modern scientific era for the purpose of achieving concrete education proves beneficial for teacher and student and educational system as a whole.

2.2.4 Types of audiovisual aids

1. Television (Video Tape Recorder): These media are good for observation. Each gives immediacy. It reaches large audience and can be used to teach any subject. It magnifies demonstration. Video tape recorder can be used to record specific programmes and later used to teach the audience. This equipment can be intently paused to explain the presentation in details. Documentaries and features can be produced and played for the audience to view.

2. Films/motion pictures: Films are used to show motion for process as a record of events and it can be used to incorporate other media. It makes learning more realistic and influences change in attitude of the learners. Films are long playing pictures, usually produced on a topic and projected on a large screen. This creates powerful emotions in viewers.

Advantages of films/motion pictures:

I.They produces both sight and sound and usually come in colour.

ii. They create powerful emotions to create

iii. They can effectively demonstrate steps in carrying out operations.

iv. They magnify objects for greater effect.

v. They can be used again and again for a very long time.

vi. Since only one major subject is usually treated in a film, the information on the subject is more detailed. Its use is no longer in vogue.

3. Films Strips: The process of film strips is similar to that of motion pictures or films. Here the pictures are static, not moving. It is mostly used for identification, recognition and aids planned sequence of ideas. It makes discussion and explanation possible as the presenter can pace as he likes. It can also be used with other media like the tape to provide audio.

4. Slides: Slides and film strips have similar process. The difference is that slides are cut into pieces. The pictures are arranged in sequence and projected one at a time using the slide projector. It is possible for the presenter to rearrange the pictures to suit his teaching. Slides can also be used simultaneously with audio recording. It is possible to produce slides in motion with a voice over commentaries. It is easy to manipulate slides and feedback is immediate.

5. Projectors:

(a) Overhead projectors: The message to be projected is prepared on transparency sheets which are made of acetate plastic. The pens used in writing are in different colours.

Functions and advantages of overhead projector include:

- **i.** It is used to provide information in systematic developmental sequence.
- **ii.** It can be prepared by wide variety of simple inexpensive methods e.g. using any transparent material like nylon.
- **iii.** It is useful particularly with large group.
- **iv.** The teacher can be writing and be facing the audience at the same time.
- **v.** It may either be pre-prepared or the illustration could be carried out during presentation.
- **vi.** The lighting situation in the room has no influence on the picture produced.

(b) Multimedia Projector With the aid of computer: the message to be prepared is made into slides and stored either in diskette or flash drive. Using the multimedia projector and a computer, the message is the projected on to a large screen.

6. Computers: This is a visual medium of communication. It can be used to design and make materials for other media. It is a training tool used to store information which can easily be retrieved. Computers are also used to communicate with individuals through the electronic mail (e-mail). This is very fast and efficient

Audiovisual may take different form:

i. PowerPoint preparation in support of a verbal lecture

ii. Video clip with voice over, and moving or still images

iii. Interactive white board

iv. Projected images in support of verbal dialogue

v. A graphic, chart or written material in support of verbal dialogue

2.2.5 Functions Of Audio Visual Media In The Process Of Teaching

AV media are needed to perform the following functions:

1. They enrich teaching i.e. to make it more meaningful and effective.

2. They focus attention i.e. to attract attention, retain it and provide a vocal point for learners to organize what they are learning.

3. They expand learning scope.

4. They tie verbal concbepts together i.e. they bring all the talking and explanation by the teacher or extension agents into reality.

5. They clarify concepts and issues i.e. they make visualization possible, they clear possible misunderstanding and deepen insight.

6. They provide a source of information and authority i.e. a well validated media constitute an authority.

7. They stimulate interest i.e. to create predisposition or willingness to learn as motivational devices. 8. They teach and consolidate learning

2.2.6 Types of audio aids

1. Radio: the radio is known to be the most effective mass media channel for communicating information, it can easily be used in the rural setting, it has been severally recommended by most development support communication researchers and extension experts as an inexpensive medium for reaching a large audience
2. Audio cassette player
3. Gramophone
4. Tape recorder: an apparatus for recording sounds on magnetic tape and afterward reproducing them; it is commonly used for recording productions that are intended for rebroadcasting to mass audiences.

Effective use of audio aids

1. They should be relevant to the circumstance
2. All teaching aids should be tactically correct
3. Too many teaching aids should not be used at a time
4. Provision should be made for definite follow-ups
5. They should be taught, not merely shown.

2.2.7 Advantages of audio and audiovisual materials

1. Get the attention of the participant

2. Easy to follow

3. Participant free more engage

4. It help to keep mistakes at a minimum

Disadvantages of audiovisual aids

1. it easier to lose focus

2. Participant might pay more attention to the graphics than the audio

3. Requires a well designed presentation or material

2.2.8 Visual aids

A. Picture: pictures can help to suggest or help to explain things which are omitted when teaching they direct learners attention especially children to the point you want to impress upon them by guiding their observation with question and suggestion you will train them to acquire the habit of looking for thing that matter in picture.

B. blackboard: the basic visual aid used in most schools is the blackboard and the chalk, it can be used with advantage in the teaching of subject like geography, biology and the first stage of language, children learn more quickly and surely by fitting words and pictures together. For the educational broadcaster the use of the blackboard may become a little difficult yet achievable.

D. Photographs- A picture, they say tell more than a thousand words. Picture and photograph have the greatest value for what they are designed to illustrate if used at the time when explanations or comment are being made on them

E. Charts- charts represent desirable permanent equipment for teaching purposes. To achieve the best results, they should be in a natural color, large enough and sufficiency clear to be seen easily from all parts.

2.2.9 Characteristics of good visual aids

(a) The pictures, maps and charts should be attractive with suitable colour

(b) Writing must be large enough and clear enough to be easily read

(c) Object and pictures should be big enough for children to see

(d) All pictures on the television must be clear and the radio should have a clear sound

(e) When preparing apparatus the correct accurate language and spelling must be consideration.

2.3 Theoretical Framework

2.3.1 Theory of Cognitive

The learning theories that are in accordance with learning with the use of audio and audiovisual materials are the cognitive and the behaviorist learning theories. The theoretical framework will be discussed under this two learning theories.

Cognitivism is a learning theory which focuses more on more complex cognitive processes such as thinking, problem solving, language, concept formation and information processing. This theory perceives learning as an active process that occurs within the learner and also influenced by the learner. Gestalt propounds a theory which focuses on the idea of “grouping”, i.e., characteristics of stimuli causes us to structure or interpret a visual field or problem in a specific pattern or way. Cognitivism is a learning theory that focuses on the processes involved in learning rather than on the observed behavior. As opposed to behaviorists cognitivists do not require an outward exhibition

of learning, but focus more on the internal processes and connections that takes place during learning.

Therefore, learning is relative to their stage of cognitive development. Cognitive teaching methods aim to assist students in assimilating new information to existing knowledge, and enabling them to make the appropriate modifications to their existing intellectual framework to accommodate that information. Cognitive is all about equipping learners with effective learning method of information processing as well as factoring in the students own beliefs and thought.

Techniques in the Cognitive approach

Emphasizes more on the active involvement of the learner in the learning process i.e. learner control, metacognitive training (e.g. self-planning, monitoring and revising techniques)

The adoption of hierarchical analyses in the identification and illustration of prerequisite relationships [cognitive task analysis procedures]

More emphasis on structuring, organizing and sequencing information to facilitate optimal processing (cognitive strategies such as outlining, summaries, synthesizers, advance organizers are employed)

Creation of learning environments which encourage students to make connections with previously learned material (i.e. recall of prerequisite skills, use of relevant examples, analogies).

Piaget's cognitive Theory

Cognitive theory is based on the work of the Swiss developmental psychologist jean Piaget 1956. Piaget's theory of cognitive development proposes that humans cannot without information, which they immediately understand, and use. Instead, human must "construct" their own knowledge and they build their knowledge through experience. One important generalization of piagetian theory is the role of the teacher. In a piagetian classroom an important teacher role is to provide a rich environment for the spontaneous exploration of the child. A classroom filled with interesting thought explores and encourage students to become active constructors of their own knowledge.

Piaget suggested three vital components of learning:

- Accommodation: - taking new information into account by modifying what we already know.
- Assimilation: - the arrangement of new knowledge inside our heads beside what we know.
- Equilibration: - balancing what we already know with the new information that we are trying to acquire.

According to the GSIs Teaching and Resource Center (2015, p.5): Cognitive constructivism states knowledge is something that is actively constructed by learners based on their existing cognitive structures. Therefore, learning is relative to their stage of cognitive development.

Cognitive teaching methods aim to assist students in assimilating new information to existing knowledge, and enabling them to make the appropriate modifications to their existing intellectual framework to accommodate that information.

2.3.2 Theory of behaviorism

The behavioral learning theory is key in understanding how to motivate and help students. Information is transferred from teachers to learners from a response to the right stimulus, students are passive participant in behavioral learning, and teachers are giving them the information as an element of stimulus-response.

Behaviorism started as a reaction against introspective psychology in the 19th century which relied heavily on first person accounts. B.F Skinner and J.B Watson believed that if they were given a group of infants, the way they were raised and the environment they put them in would be the ultimate determining factor for how they acted, not their parent or their genetics.

Positive reinforcement is key in the behavioral learning theory. Without positive reinforcement, students will positive will quickly abandon their responses because they don't appear to be working Repetition and positive reinforcement go hand in hand with the behavioral learning theory. Teachers often work to strike the right balance of repeating the situation and having the positive reinforcement come to show the students why they should continue that behavior.

Motivation plays an important role in behavioral learning, positive and negative reinforcement can be motivators for students. For example, a student who receive no praise for a good test score is much more likely to learn the answer effectively than a student who receive no praise for a good test score, the student who receive no praise is experiencing negative reinforcement – their brain tell them that though they got a good grade, it didn't really matter, so the material of the test becomes unimportant to them. Conversely students who receive positive reinforcement see a direct correlation to continuing excellence, completely based on that response to a positive stimulus.

2.4 Empirical Framework

Oladejo et al, (2011) In an experimental study which involved treating some students to improvised instructional materials, it was found out that students exposed to instructional materials with some elements of audio-visual aids achieved better than students taught with standard instructional materials. It was discovered that using instructional materials such as visual aids assists the teacher economically and also allows students' interaction which make students achieve better in their lessons.

Also, Ode (2014) carried out a study on the impact of audio-visual resources on teaching and learning in tertiary schools in Makurdi metropolis. It was found out that all the selected schools in Makurdi were using various types of audiovisual materials ranging from filmstrips, microforms, slides, transparencies, tape recordings, flashcards, projected opaque materials, photographs, discs, arts and Study prints, charts, atlases, maps, posters and billboards and realia for teaching and learning. The findings from the study suggested that the use of audio-visual resources significantly affected teaching and learning as they promoted better understanding and expanded students' learning experience.

Nwankwo (2004) also carried out a study on the use of audio-visual aids in the teaching of English in several schools in Anambra state. It was found out that teacher's required audio-visual material to facilitate teaching of English and improve job effectiveness in general. It was observed that there was a relationship between the English teachers' use of audio-visual aids in the classroom and their teaching experience as well as previous training in the use of audiovisual materials.

Data from the study revealed that many teachers had no experience at all on the use of audio-visual materials which made it impossible to achieve expected educational results. The selected secondary schools were found to be adequately equipped with Textbooks and chalkboards which were used very well. However, software materials such as charts, tapes, slides and transparencies were not found in the schools and few visual aids that existed were not used effectively. Lack of

adequate funds, electricity supply and high costs of equipment on the supply of instructional materials were among the problems that hindered availability of audio-visual aids in Anambra Schools. All these problems affected students' learning and academic achievement in general.

2.5 Summary of Literature Reviewed

This chapter discusses on the literature review of audio and audiovisual materials, aids and technology, classification of instructional materials and utilization of audio and audiovisual materials in the teaching and learning process and the theoretical and empirical framework.

The places of instructional material (audio and audiovisual aids) in the effective implementation of any level of education cannot be undermined. Audio and audiovisual materials can perform such functions as the extension of the range of experience available to learners, supplement and complement the teachers verbal explanation thereby making learning experience richer and providing the teacher with interest into a wide variety of learning activities.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter focuses on the method, procedures, processes and strategies to be use by the researcher to make a research work a reality. Research methodology will be addressed under the following headings:-Research Type, Population and Sampling, Research Instrument, Validation of Research

Instrument, Reliability of Research Instrument, Method of Data Collection, Method of Data Analysis

3.1 Research Type

This research project is a survey research which addresses the assessment of availability and use audio and audiovisual technology for teaching and learning in tertiary institution in Minna metropolis. The use of audio and audiovisual media as tools for teaching and learning are playing a significant role in education, and teachers need to understand their potential and to learn how they can be used to maximum advantage in improving classroom instruction. In order to determine the teacher competence in the use of audio and audiovisual media and material for teaching and learning rather this study will adopt questionnaires method in the collection of data for this research work.

3.2 Population

The population for this research work comprises of tertiary institutions making use of audio and audio-visual technologies for teaching and learning in Minna metropolis. There are six tertiary institutions in Niger state, the institution include; Federal University of Technology Minna, Niger State, College of Education Minna, Ibrahim Badamasi Babangida University Lapai, Federal College of Education Kontagora, Niger State Polytechnic Bida. The target institution for this research work comprises of two institutions which are: Federal University of Technology Minna, Niger State and Niger State College of Education Minna.

3.3 Sample and Sampling Techniques

There was no sampling because of the manageable size of the population, the table below shows the distribution of the population across the study area.

Table 3.1 Sample Size

Name of school	Population
FUT Minna	90
College of Education Minna	90
Total	180

A total of one hundred and seventy-eight (178) questionnaire was retrieved out of the one hundred and seventy-eight (178) questionnaire distributed.

Table 3.2 Gender Distribution of students

Gender	Frequency	Percent
Male	90	50.6
Female	88	49.4
Total	178	100.0

In Table 4.1, the respondents are classified by gender. The table shows the respondents by their gender. The male respondents make up 50.6% of the population, while the females made up the remaining 49.4% of the sampled population.

3.4 Research Instrument

Research instrument that was used in the study to collect the data needed are questionnaires and was design by the researcher. The research instrument was titled " assessment of the availability and use of audio and audiovisual technology for teaching and learning in tertiary institution in Minna metropolis".

The questionnaires were designed by the researcher in close consultation with his supervisor, the questionnaires were made up of both fixed response and open – ended questions because of the

nature of the study which desires to know the forms, aspects and details about the use of audio and audiovisual materials/technologies in the institution. There were many categories of options or responses to each question in the questionnaires. These range from available,not available, utilized, not utilized, very often, often. In completing the questionnaire the questionnaire,

Section A which consist of demographic information about the respondents.

Section B contains questions on the availability of audio and audiovisual

Material for teaching and learning

Section C contains

Questions on the effective utilization of the available Audio and audiovisual technologies/materials.

3.5 Validation Of Research Instrument

The questionnaire was given to expert and lectures in Educational technology department, School of Science and Technology Education, Federal University Of Technology Minna Niger State for it face and content validity. The instrument was later given to the supervisor who make necessary corrections

3.6 Reliability of Research Instrument

This study ensured reliability by Test Re-test method of data collection; this means that the questionnaires was test twice at different times. Also the supervisor assisted in refining the instruments focusing on study, research tasks and questions. Moreover, validation of research instruments continued during the field work by correcting, restructuring and modifying parts or

whole questions whenever the needs arose as the study continued. Therefore, data trustworthiness was ensured,

3.7 Method of Data Collection

The researcher visited the institution physically to administer his questionnaire and also to observe what audio and audio-visual materials those in the institutions. The questionnaires were given by hand to students and lecturers and collected on the spot within two days.

3.8 Method of Data Analysis

The data collected for this research work was organized and analysed. Because the data obtained in the study are mainly descriptive, non-parametric statistical techniques such as percentage, frequencies of numbers converted into percentages, in one case mean is used as means of analysis were used in the analysis. This helped to analyze the answers to the questions in the questionnaire and draw conclusion.

CHAPTER FOUR

4.0 RESULTS AND DISCUSSION OF DATA

4.1 Introduction

The purpose of the study is to assess the availability and use of audio-visual resources in the colleges of education in Niger State. This chapter discusses the data analysis, presentation of the results of data analyzed and discussion of the results. The data were analyzed using the Statistical Package for Social Sciences (SPSS) Version 25. The biodata of the respondents was analyzed using

a frequency table, while the research questions were analyzed using mean and standard deviation. A satisfactory scale was set to infer aware, not aware, available and not available; 1.0 – 1.4 not aware and not available, 1.5 – 2.0 aware and available, while a scale of 1.0-1.4 was used to infer not utilized and 1.5-2.0 for utilized.

These variables are assessed independently with specific research questions and objectives as follows:

Research Question One: Are audio technologies available for teaching and learning in tertiary institution in Minna Metropolis?

Table 4.1 Availability of audio technologies

S/N	Items	N	Mean	Std. Deviation	Decision
1	Radio	178	2.00	0.00	Available
2	Speakers	178	2.00	0.00	Available

3	Tape recorder	178	1.60	0.49	Available
4	Microphone	178	1.93	0.26	Available
5	CD player	178	2.00	0.00	Available
	Grand Mean	**100**	**1.91**		**Available**

Decision mean: 1.50

Table 4.1 shows the Mean and Standard Deviation of student's response on the awareness of E-learning in the Federal University of Technology Minna. The table reveals the computed mean score of 2.00 with Standard Deviation of 0.00 for item one, 2.00 with Standard Deviation of 0.00 for item two, 1.60 with Standard Deviation of 0.49 for item three, 1.93 with Standard Deviation of 0.25 for item four, 2.00 with Standard Deviation of 0.00 for item five, 2.00 with Standard Deviation of 0.00 for item six, 1.86 with Standard Deviation of 0.34 for item seven, 1.96 with Standard Deviation of 0.19 for item eight. The table revealed further that, the grand mean score of responses to the ten items was 1.91 which was greater than the decision mean score of 1.50. This implies the availability audio resources in the colleges of education in Niger State

Research Question Two: Are audio-visual technologies available at teachers' disposal for teaching and learning in tertiary institution in Minna Metropolis?

Table 4.2 Availability of audio-visual technologies

S/N	Items	N	Mean	Std. Deviation	Decision
1	Multimedia projector	178	2.00	0.00	Available

2	Television	178	1.86	0.34	Available
3	Tape recorder	178	1.96	0.20	Not Available
4	Videotapes	178	2.00	0.00	Available
5	Computer	178	1.97	0.16	Available
	Grand Mean	**100**	**1.82**		Available

Decision mean: 1.50

Table 4.2 shows the Mean and Standard Deviation of student's response on the awareness of E-learning in the Federal University of Technology Minna. The table reveals the computed mean score of 2.00 with Standard Deviation of 0.00 for item one, 1.86 with Standard Deviation of 0.34 for item two, 1.96 with Standard Deviation of 0.20 for item three, 2.00 with Standard Deviation of 0.00 for item four, 1.97 with Standard Deviation of 0.16 for item five. The table revealed further that, the grand mean score of responses to the ten items was 1.82 which was greater than the decision mean score of 1.50. This implies the availability of audio-visual resources in the colleges of education in Niger State

Research Question 3: Are audio technologies used for teaching and learning in tertiary institution in Minna Metropolis?

Table 4.3 Utilization of audio technologies

S/N	Items	N	Mean	Std. Deviation	Decision
1	Radio	178	1.03	0.16	Unutilized

2	Speakers	178	1.88	0.33	Utilized
3	Tape recorder	178	1.95	0.22	Utilized
4	Microphone	178	1.97	0.16	Utilized
5	CD player	178	1.97	0.16	Utilized
	Grand Mean	**178**	**1.75**		Utilized

Decision Mean: 1.50

From Table 4.3, The table reveals the computed mean score of 1.03 with Standard Deviation of 0.16 for item one, 1.88 with Standard Deviation of 0.33 for item two, 1.95 with Standard Deviation of 0.22 for item three, 1.97 with Standard Deviation of 0.16 for item four, 1.97 with Standard Deviation of 0.16 for item five. The table revealed further that, the grand mean score of responses to the ten items was 1.75 which was greater than the decision mean score of 1.50. This implies the use of audio resources in the colleges of education in Niger State

Research Question 4: Are audio-visual technologies used for teaching and learning in tertiary institution in Minna Metropolis? The response is revealed in Table 4.4

Table 4.4 Utilization of Audio-visual technologies

S/N	Items	N	Mean	Std. Deviation	Decision
1	Multimedia projector	178	1.97	0.16	Unutilized

2	Television	178	2.00	0.31	Utilized
3	Tape recorder	178	4.00	0.00	Utilized
4	Videotapes	178	3.75	0.43	Utilized
5	Computer	178	2.38	0.76	Utilized
	Grand Mean	**100**	**1.98**		Utilized

Decision Mean: 1.50

From Table 4.4, The table reveals the computed mean score of 1.97 with Standard Deviation of 0.16 for item one, 4.00 with Standard Deviation of 0.00 for item two, 3.74 with Standard Deviation of 0.44 for item three, 2.41 with Standard Deviation of 0.79 for item four, 3.86 with Standard Deviation of 0.34 for item five, 3.91 with Standard Deviation of 0.51 for item six, 3.55 with Standard Deviation of 0.62 for item seven, 2.93 with Standard Deviation of 0.97 for item eight, 1.47 with Standard Deviation of 0.96 for item nine. The table revealed further that, the grand mean score of responses to the ten items was 1.98 which was greater than the decision mean score of 1.50. This implies the use of audio-visual resources in the colleges of education in Niger State

4.2 Hypothesis testing

HO_1: There is no significant difference between male and female and the use of audio-visual technologies for teaching at tertiary institutions in Minna Metropolis.

Table 4.5 t-test statistics on gender and utilization of audio-visual technologies

Gender	N	df	$\bar{x}$	SD	t-value	p-value
Male	90		1.91	0.11		

		98			-0.60	0.54
Female	88		1.92	0.09		

Not Significant at 0.05 level

The t-test for table 4.5 revealed that there is no significant difference between male and female and the use of audio-visual technologies for teaching at tertiary institutions in Minna Metropolis. The p-value of 0.60 which was greater than 0.05 which was the level of significance, confirmed that there was no significant difference between male and female and the use of audio-visual technologies for teaching at tertiary institutions in Minna Metropolis.

4.3 Summary of the Findings

Findings revealed that there is availability of audio materials in tertiary institutions in Minna Metropolis. This was contrary to the findings of Nwankwo (2004) who revealed that audio materials are not available.

The findings also revealed availability of audio-visual material's for effective teaching and learning.

The findings revealed that there is use of no significant difference between male and female and the use of audio technologies for teaching at tertiary institutions in Minna Metropolis.

The findings also revealed that there was no significant difference between male and female and the use of audio-visual technologies for teaching at tertiary institutions in Minna Metropolis

CHAPTER FIVE

5.0 CONCLUSION AND RECOMMENDATIONS

5.1 Summary

The research was carried out primarily to ascertain the availability and use of audio-visual resources in the colleges of education in Niger State. The study is a descriptive survey research design. The sample size for the research is one hundred (178) tertiary Institutions , Minna

Metropolis, Niger State. The study has four research questions and one hypothesis. A questionnaire was used as an instrument for data collection. Suggestions and recommendations among others were made. Research question were asked on the three major issues in the research and a questionnaire was used to elicit the responses from respondents in the sampled schools in Minna, Niger State.

The data generated from the questionnaire was translated and interpreted using mean and standard deviation for the research question, a decision mean of 1.50 was used in the decision making and the grand mean was used to answer the research questions. While the hypothesis was interpreted using the t-test statistics and it was found out that; there was no significant difference between male and female and the use of both audio and audio-visual technologies for teaching at tertiary institutions in Minna Metropolis

5.2 Implication of Major Findings

1. Audio instructional materials are available in tertiary institutions in Minna Metropolis
2. Audio-visual materials are available in tertiary institutions in Minna Metropolis
3. Audio instructional materials are utilized in tertiary institutions in Minna Metropolis
4. Audio instructional materials are utilized in tertiary institutions in Minna Metropolis
5. There is no significant difference between male and female and the use of audio-visual technologies for teaching at tertiary institutions in Minna Metropolis

5.3 Conclusion

Having carefully examined the work, some logical conclusion can be arrived at, assistive technologies were unavailable and not utilized in special schools as revealed by the data analysis.

Answers to the research questions revealed audio materials are available, audio-visual materials are available, audio materials are utilized and audio-visual materials are utilized in tertiary institution in Minna Metropolis. The hypothesis testing revealed that there was no significant difference between male and female and the use of audio-visual technologies for teaching at tertiary institutions in Minna Metropolis

5.4 Recommendations

The following recommendations were made,.

1. Audio-visual in teaching and learning should be encouraged.
2. Government should ensure adequate funding and provision of audio-visual materials in tertiary institution.
3. Training of teachers, students on the use of audio-visual materials should be encouraged

5.5 Suggestions for Further Research

This study only aimed at availability and use of audio-visual resources in the colleges of education in Niger State. Similar studies should be on;

1. The effect of audio-visual materials on the achievement and retention of secondary school students

2. Perceived ease of use, perceived usefulness of audio-visual media amongst undergraduate students.

REFERENCE

Adebowale, J. & Ademola, E. (2013). Audio-visual resources availability and use for library services among colleges of education in Lagos State Nigeria. International Journal of library and information science

Adebowale, J., and E. Ademola. "Audio-visual resources availability and use for library services among colleges of education in Lagos State Nigeria." International Journal of library and information science 5.10 (2013):

Asanbe, m. O., and m. P. Olagunju. "Impact of ict on the effective teaching in selected secondary schools in akoko north local government area of ondo state." New trends in science, technology, management and social sciences in africa (2021): 23.

Aggarwal, JC (2009). Principles, Methods & Techniques Of Teaching. India: Vikas Publishing House Pvt Ltd, India.

Akram, S.; Sufiana; Malik, K. (2012). ") Use of audio visual aids for effective teaching of biology at secondary schools level". Education Leadership.

Brown, J. W. (1964). AV instruction, materials and methods.

Cakir, I. (2006). The use of video as an audio-visual material in foreign language teaching classroom. Turkish Online Journal of Educational Technology-TOJET, .

CAKIR, Ismail. The use of video as an audio-visual material in foreign language teaching classroom. Turkish Online Journal of Educational Technology-TOJET, 2006,

Daniels, Lee. "Audio-Vision: Audio-Visual Interaction in Desktop Multimedia." (1995).

DeBernardes, A; Olsen, EG (1948). ") Audio-visual and community materials – some recent publications". Education Leadership:

DeBernardes, A; Olsen, EG (1948). ") Audio-visual and community materials – some recent publications". Education Leadership:

Grierson, M. S. (2005). Audiovisual composition (Doctoral dissertation, University of Kent at Canterbury).

Martinez, Helard Becerra, and Mylène C. Farias. "Full-reference audio-visual video quality metric." Journal of Electronic Imaging 23.6 (2014):

MATHEW, Nalliveettil George; ALIDMAT, Ali Odeh Hammoud. A study on the usefulness of audio-visual aids in EFL classroom: Implications for effective instruction. International Journal of Higher Education, 2013,

Mathew, NG; Alidmat, AOH. "A study o the usefulness of Audovisual aids in EFL classroom: implications for effective instruction". International Journal of Higher Education.

Nwankwo, I., Mr Omebe Matthew, and Mrs Anikeze Christiana. "Extent of Teachers' Classroom Management Practices for Quality Teaching and Learning in Secondary Schools in Ebonyi State." (2019).

NITANDA, Naoki; HASEYAMA, Miki. Audio-based shot classification for audiovisual indexing using pca, mgd and fuzzy algorithm. IEICE transactions on fundamentals of electronics, communications and computer sciences, 2007,

O'BRIEN, Janet S., et al. Audiovisual Materials for the Engineering Technologies. 1979.

Ode, Elijah Ojowu (2014). "Impact of audio-visual (AVs) Resource on teaching and Learning some selected private secondary schools in Makurdi". International Journal of Research in Humanities, Arts and Literature. 2.

Oladejo, Maruff Akinwale, and Abiodun M. Gesinde. "Trends and future directions in open and distance learning practice in Africa." Journal of education and practice 5.18 (2014): 132-138.

Rodriguez, Dave. "Increasing accessibility of audiovisual materials in the institutional repository at Florida State University." The Journal of Academic Librarianship 47.1 (2021): 102291.

RODRIGUEZ, Dave. Increasing accessibility of audiovisual materials in the institutional repository at Florida State University. The Journal of Academic Librarianship, 2021,

UtRay, F., Pereira, A., & Orero, P. (2009). The present and future of audio description and subtitling for the deaf and hard of hearing in Spain. Meta: journal des traducteurs/Meta: Translators' Journal,

UtRay, Francisco, Ana Pereira, and Pilar Orero. "The present and future of audio description and subtitling for the deaf and hard of hearing in Spain." Meta: journal des traducteurs/Meta: Translators' Journal 54.

Witt, P. W. (1954). Audio-visual methods in teaching. Audiovisual communication review,

Witt, Paul WF. "Audio-visual methods in teaching." Audiovisual communication review 2.4 (1954):

WITT, Paul WF. Audio-visual methods in teaching. Audiovisual communication review, 1954, 2

Wright, R. (2004). Digital preservation of audio, video and film. Vine.

XIANG, Catherine Hua (ed.). Cases on audio-visual media in language education. IGI Global, 2017.

Xiang, Catherine Hua, ed. Cases on audio-visual media in language education. IGI Global, 2017.