COURSE TITLE: PRODUCTION AND USE OF AUDIO VISUAL AIDS

COURSE CODE: ARD 505

NUMBER OF CREDITS: 2 Credits

COURSE DURATION: Two hours per week for 10 weeks (20hours)

CONSULTATION HOURS: 4pm -6pm on Mondays

COURSEWARE DEVELOPED BY: DR (MRS) C. I. SODIYA and DR. O. OYEKUNLE

LECTURER DETAILS:

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Course Outline:

(1) Historical Development Of Audio-Visual Communication
(2) Instructional Technology
(3) Advantages of Instructional Technology
(4) Classification Of Audio Visual Aids
(5) Levels Of Learning In Relation To The Use Of Audio Visual Aids
(6) Selection Of Audio Visual Materials For Extension Work
(7) Contribution Of Human Senses To The Way We Learn
(8) Production Of Av/Training Materials
(9) General Guidelines For The Production Of Training Materials/Aids
(10) Facilities Needed For Production
(11) Materials For Production
(12) Equipment For Production
(13) AUDIO AIDS
    (i) How To Use Radio In Extension Teaching Situation

(ii) Audio/Tape Recorder

(14) Visual Aids
(i) Educational Boards
(ii) Educational Chats
(iii) Still Photographs

(15) Audio Visuals
(i) Functions Of Audio Visual Media
(16) Three Dimensional Aids:

(17) Care And Maintenance Of Selected Audio Visual Equipment And Materials
(18) Museum Resources For Educational Purposes

Course Requirements:

Students are expected to participate in all the course activities and have a minimum of 70% attendance to qualify for writing the final examination. Students will be required to submit a term paper on any of the topics treated in this course. This will account for part of the continuous assessment. Students will be expected to write a short class test and submit assignments. All class assignments should be word processed on A4 paper

Method of Grading:

1. Class Assignment	5marks
2. Class Attendance	5marks
3. Class Test	15marks
4. Term paper	5marks
5. Comprehensive Final Examination	70marks
Total	100marks

Course Delivery Strategies:

The course objectives will be achieved by the traditional face to face weekly lecture on designed topics, theoretical materials (lecture notes) provided during the lectures and group exercises. The course delivery strategies will be supported through tutorials and study review at the end of the semester. Students will be encouraged to actively participate during the lecture. Students will also be encouraged and required to read around the topics and follow current instructional aids used for agricultural extension teaching around the world in journals and on the web.

Lecture Content

HISTORICAL DEVELOPMENT OF AUDIO-VISUAL COMMUNICATION

The pre-historic man made use of certain stone implement and symbols to guide his day to day activities. We have it on record that the early man made use of symbols and drawings to communicate ideas. These drawings and symbols represented Audio visual media (AVM) during the pre-historic era.

In modern times, AVM have been conceived as “a wide range of instructional materials and devices designed to provide realistic imagery and substitute experiences in order to enrich curricular experiences of many kinds”. It could also be defined as “any device which assists the teacher in more effective instructions”

From the definitions, it is clear that AVM are designed for direct instruction and to enrich the teaching and learning process and hence contribute to better teaching. Formal instruction involves integration of verbal and non-verbal communication with interdependent effects of learning. Examples of instructional devices for teaching that existed prior to the 19thth century include:

1. Pascal's Arithmetic Machine
2. A worlds map of the 16th century
3. A planetary machine

The main challenges of AV in Extension today revolve around the use of television and motion pictures which not only constitute a new and important technique on one hand but also serve as means of utilizing and integrating all other forms of AV instructions.

Motion pictures have been used for educational purposes right from inception. Motion pictures and television have had a great impact on education and have broken down some of the barriers between the classroom or the extension teaching settings and the outside world of experience and action.

The development of photography has greatly modified technique of book illustration and exhibitions. Advances in pictorial technique have provided greater flexibility of the non-verbal components of books and exhibitions with consequent improvement in the overall communicative pattern.

Until recent times, the use of instructional media in the classrooms or extension training settings was scanty. Today, many instruments/equipment for verbal and non-verbal instructions have been developed. Media use in education and extension work did not start effectively in Nigeria until after independence. Prior to independence, the first educational radio programme which was in English language was broadcast in early 40s by the Radio Distribution Service under the post and Telegraphs Department.

The Nigeria Broadcasting Service NBS established in 1951 inherited this very limited educational programme, a once a week or single episode programme. This was the situation until 1957 when the NBS was transformed into the Nigerian Broadcasting Corporation NBC. On the 27th January, 1958 the Western Nigeria Ministry of Education opened his Audio-Visual Centre in Ibadan and made the broadcast of its first educational programme. Other regional ministries of education took queue of this and opened AV centers in which educational broadcast was emphasized. Educational Radio Broadcasting was inaugurated in 1958, quickly developed in 1960 to the Nigeria Broadcasting Corporation Schools broadcasting unit. This and finally became the Federal Radio Corporation of Nigeria (FRCH) educational services in 1981 with its headquarters in Kaduna.

Dr. J. S. Cookey, the then Federal adviser on education addressed the National Advisory Committee on Education in November 1969, and said "The production and use of Audio-visual materials should be taught as an important aspect of the curriculum in our Teacher Training Colleges and Agricultural Extension training establishments. Along this line, the Federal Government took over the Northern School Broadcasting Unit in 1969 and changed its name to Federal Schools

Broadcasting Unit with its Headquarters at Kaduna. On the 1st April, 1977, the name was further changed to 'The National Educational Technical Centre with its Headquarters in Kaduna. It was of the status of Research Institutes having its own Director.

Hence, with this development, there was the establishment of various Resource Centres and Educational technology Units in Ministries of education all over Nigeria. From the above, it is certain that the need for rapid application of educational technology to formal classroom teaching and extension teaching in Nigeria and other parts of the world has been recognized. Specifically in the field of extension, the story regarding the development of AV technology and its use in extension is the same. For example we have the Audio-Visual Technology Centre of the National Agricultural Extension and Research Liason Services (NAERIS) located at Zamaru in Zaria. We also have the Agricultural Media Resources and Extension Centre (AMREC) as a Unit under the University of Agriculture, Abeokuta. Other similar units have been established in various agricultural extension and related institutions nation wide.

INSTRUCTIONAL TECHNOLOGY

Instructional technology is a process consisting of educational media as well as methods for organizing and effectively utilizing these media in the extension teaching situation, i.e. without manipulating the media effectively you may not achieve your goal.

Instructional technology involves the integration of men, machines/materials and ideas.

Men: Extension agent, farmers, members of youth club, women group etc.

Machine/material: AV equipment and mass media used for training and teaching purposes. e.g. Radio and TV.

Ideas: Objective of the teaching task. Selection and the continuous evaluation of the materials.

Specifically, instructional/Audio-Visual technology concerns itself with the use of equipment (hard wares) and materials (soft wares) in the extension teaching and learning process.

Such materials include:

1. Projected media e.g. Films, filmstrips etc.
2. Broadcast and Telecommunication media e.g. Radio, Television.
3. Computers/teaching machines
4. Printed materials e.g. journals, textbooks, hand outs etc.
5. None projected cards e.g. chalkboards, adhesives e.g. flannel graph, magnetic board, bill board etc.
6. Pictorial cards e.g. charts, photographs,
7. Three dimensional aids e.g. models, replicas.

For effective teaching, a suitable objective must be set for the lesson. After this, the extension agent should seek to organize and structure the learning tasks. With this, he will ask such questions as what materials, equipment and method will I need to use so that the farmer might learn better. This quotation should enable him to identify the correct style and quality of materials and equipment that are requested for effective teaching of the topic so that the learners can acquire the necessary knowledge, skills attitude, values, habits and interest with proper understanding.

Extension agent – Technical message
Method of presentation
Environment is conducive
Relevance to the circumstances of the user of the message
AV technology to use.

All these are efforts the VEA should harness to maximize the process of teaching and learning.

Advantages of Instructional Technology

1. It supplies a concrete basis for conceptual thinking and hence reduces meaningless words response of learners (meaningless questions).
2. It has a high degree of interest for learners.
3. It offers necessary basis for the development of learning hence it makes learning to be more permanent.
4. It offers a reality of experience which stimulates self activities on the part of the learners.
5. It provides experience not easily secured by other methods and contribute to the efficiency of learning.

CLASSIFICATION OF AUDIO VISUAL AIDS

	VISUAL	AUDIO	AUDIO VISUAL
1.	Non projected Aids	(1) Record & record players	(1) Film
	- Chalkboard	(2) Tape recorders	(2) Television
	- Adhesives e.g.	(3) Radio	(3) Video
	Flannel graph, magnetic	(4) Language laboratories	
	Board, bill board, plastigraph e.t.c.		
2.	Pictorial Aids		
	- Chats		
	- Photographs		
3.	Mobiles		
4.	Three dimensional aids		
	Displays, models		
5.	Projected aids		
	- Filmstrips & slides		
	- Projectors		

LEVELS OF LEARNING IN RELATION TO THE USE OF AUDIO VISUAL AIDS

There are three levels of learning in relation to the use of audio visual aids.

1. Abstract level of learning or memory level in teaching – This level encourages rote learning i.e. learning that emphasizes cramming. This makes learners to achieve very little. The method is subject and teacher/agent centered and it has failed to promote and sustain the interest and inquisitive spirit of the learners.
2. The Semi-concrete level of learning and understanding level in teaching. At this level, the teacher speaks of what he knows and understands. Learners accept the facts only after discussion i.e. the learners are made to be active participants and they learn at their own pace. The teacher or agent acts as intelligent guide. AV materials play a vital role at this level, e.g. a picture of a tractor and other pictorial materials can be used as substitutes for reality.
3. Concrete level of learning and reflective level in teaching. At this level, the students or learners are not only active but they are active participants. The teacher/agent makes use of concrete materials which are the best of all teaching aids. Real objects are used not imitations, real exercises (method demonstration). Learners watch you, participate and practicalise it under your supervision.

SELECTION OF AUDIO VISUAL MATERIALS FOR EXTENSION WORK

In order to select the best and the most suitable audio visual and materials, certain factors should be considered:

1. Authority reference – Some authorities recommend materials to use. Check references and find out recommendations on materials to use in teaching a particular group of people/audience.
2. Instructional task/aim and objective of the teaching – Examine your objective.
3. Learners characteristics
    - Age range of the learners
    - Level of experience as knowledge in farming
    - Educational background
    - Attitude of the learners
4. Operating versatility – can the material be easily manipulated by you as it is very complex.
5. Instructional uses – can the medium enable the agent to arrange a more effective instructional environment which can help the learner to learn more and better.
6. Aesthetic consideration – The material must be acceptable artistically. People like colorful things.
7. Safety and ease of use – Do not use dangerous materials.
8. Scope and price – it must be appropriate and have an overall coverage of the topic. It must be cost effective. Use cheaper materials.

CONTRIBUTION OF HUMAN SENSES TO THE WAY WE LEARN

Balogun (1982) came out with findings of his research that human beings learn through 5 major senses and the contribution of the senses to learning are as follows:

1% through taste

1.5% through touch

3.5% through smell

11.0% through hearing

83.0% through sight

From the above data it appears that the bulk of our learning is through the sense of sight. On the other hand, the rate at which we remember what we have learned varies with the senses. For example:

10% of what we hear is remembered

50% of what we hear and see is remembered

90% of what we hear, see and do is remembered

This can be substantiated by popular a Chinese proverb which says: “What I hear I forget, what I see I remember, what I do I understand”.

All the above mentioned points suggest that for effective teaching and learning to take place, the extension agent must go beyond mere talking. He needs to provide visual and or concrete experiences of the things he is teaching. It should be noted that educational or AV media should adequately complement words as concrete experiences provide a solid base of knowledge.

PRODUCTION OF AV/TRAINING MATERIALS

Broadly speaking, there are two types of production:

(i) Commercially produced

(ii) Locally produced materials/aids

Commercially produced materials are designed for a relatively heterogeneous audience and they could be useful for multiple purposes.

The locally produced materials are designed for more specific purposes and for relatively homogenous learner audience.

For adequate use of training aids in extension work, it is imperative to encourage extension agents to acquire and develop skills in the design and production of simple learning aids.

General Guidelines for the Production of training materials/aids

(1) Identification or understanding of the specific training objective.

(2) Familiarity with the characteristics of the target audience to ensure suitability in terms of age, social and cultural background, beliefs, linguistic competence etc.

(3) The content of the message should then be selected based on the first 2 guidelines.

(4) Cost effectiveness must be ensured.

Facilities Needed for Production

1. Spacious room for planning, design and development.
2. Provision for graphics, photographic and audio materials
3. Storage space for quick and easy and retrieval of materials
4. The maintenance culture to ensure continuous usefulness of the facility.

Materials for production

Adequate materials should be provided for graphics, sound recording, photography, duplicating and reproducing materials and some printing materials e.g. graphics require ample supply of card boards, newsprints, brown papers mechanical lettering devices cut out letters, pens, inks, pencils, markers, rulers, water colour transparency sheet, laminating materials etc. For photography, we need ample supply of films and printing materials.

Equipment for Production

Equipment should be provided for typing and production of materials. Tape recorders, editing equipment, tape duplicator for audio aids. Video camera and still camera.

AUDIO AIDS

Any device used to pass information to a learner in a teaching learning situation only through the sense of hearing is an audio aid.

Audio media are communication media which provide information that we hear. Such information is received through the ears. Audio materials include: radio, tape recorders, telephone.

(1) Radio: The radio is known to be the most effective mass media channel for communicating agricultural 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 good majority of rural dwellers in many developing countries.

Advantages of radio in Extension work

1. The audio ability makes it more appealing. Good microphone voice is very attractive to human beings, especially when local dialects are used. This breaks the literacy barrier created in print media.
2. It is the cheapest and fastest means of reaching very wide audiences.
3. It reaches large audience at the same time. Because large number of people own radio sets, information spreads very fast.
4. It is less expensive to purchase the availability of the transistor radio at affordable prices makes it attractive.

5. It does not depend solely on electricity for power source. Almost all transistor radio sets use batteries.
6. Because of its small size, radio can be carried about.
7. It emphasizes local languages most radio stations broadcast in the local languages with their area of reception.
8. It removes the barrier of time and space as it can reach a large percentage of people at the appropriate time.
9. Programme broadcasts could be repeated.
10. Farmers can be engaged in other activities while listening to radio programme.

How to use Radio in extension teaching situation

1. Select topics based on the needs of people.
2. Physical condition – is there any noise in the environment, ventilation, seats.
3. Learning condition – get materials ready for the teaching.
4. Teachers involvement – VEA must be involved. Generate a discussion that will show that they actually listened.
5. Evaluate.

A radio vision situation can be created by preparing and distributing visual materials to the intended audience in advance. When the programme is on they could turn to the visuals thereby combining them with the message.

Audio/Tape Recorder

Information to be disseminated to the farmers can be recorded on audio tapes or cassettes with the aid of a tape recorder. This can then be played for the farmers in their villages. The teacher can pause the tape and explain.

VISUAL AIDS

I. EDUCATIONAL BOARDS

There are various boards used for the purpose of educational communication and for extending instructions.

(a) The Chalkboard

- it is a vehicle for a variety of visual materials. It was the major instructional material used in colonial schools in Nigeria and in most training situations in the colonial era. It is still the most commonly used instructional medium in rural setting and in most of the developing countries.

Types of chalkboard

1. Movable Chalkboard – This is made of plank or plywood to stand on a support. It can be used for both indoor and outdoor training sessions.
2. Wall Chalkboard – Painted wall is the most common in rural areas but in schools, concrete wall is common plywood fixed to the wall can also be used. It has wider working area. It can be easily projected upon and provides good writing surface. It has the disadvantage of exposing works not yet needed.

How to make effective use of chalkboard.

1. Never talk with your back turned to the audience. It is important to maintain eye contact with your audience so as to hold the interest and attention.
2. Write legibly and boldly for everybody to see clearly.
3. Arrange work on the chalkboard in an orderly manner

4. Keep your chalkboard clean always
5. Renovate chalkboard when necessary.

(b) Flannel graph (adhesive)

It is used with the idea of rough to rough surface. This could be made of cotton, flannel or wool materials. It can be made by covering a piece of plywood above. Picture, diagrams backed with the same materials as sand papers will stick to the flannel board. It is used to illustrate points, state facts and highlight ideas. It is inexpensive and easy to prepare. Materials used on the flannel board should be stored flat in large envelopes.

(c) Magnetic Board: This is mostly used for displaying purposes. Three dimensional aids can be displayed on this type of board. The object to be displayed is simply magnetized on to the surface of the board.

(d) Bulletin Boards: This is used for the display of educational and information materials. It is inexpensive, saves time as materials that could not be presented during the training session could be pasted on the bulletin board.

(2) **EDUCATIONAL CHATS**

These are probably the most useful type of visual and available to extension agent in rural setting. Extension agents can make them easily and effectively. Chats of many concepts usually lead to confusion and too complicated ones usually have poor educational value, hence the following guidelines need to be followed in producing chats of high educational value.

i. What information should the chat convey and for what size of audience.

ii. Is it simple enough, attractive, accurate and colorful? Does it carry limited information?

iii. Is the chat necessary at all or is there another material that could do a better job.

Educational Uses of Chats

i. Chats are used in classroom teaching or training setting especially to introduce or consolidate an idea or an innovation.

ii. Chats are useful for revision.

iii. They could be used to highlight important points.

iv. They are used to visualize some ideas or concepts especially those that may be difficult to understand if treated only in words. Storage of chats should be done flat and not rolled. It should be done horizontally or vertically according to size and not according to size and not according to content.

(3) **STILL PHOTOGRAPHS**

These are pictures taken of a particular event or materials to be taught devoid of any distractive element and displayed in an appropriate sequence to form a complete story which leads to the attainment of the training objective or which will enhance the understanding of the subject matter.

THREE DIMENSIONAL AIDS: These are materials that have length, breadth and depth, hence they are referred to as three dimensional.

They can be any of the following types:

1. Real objects like orange, fish, life animal used for exhibition etc which you can see and hold.
2. Imitations of the real object which are enlarged in size e.g. model of a grasshopper.
3. Imitation of the real object diminished in size e.g. a globe of the world or model of a tractor.
4. Mock form e.g. a toy tractor that moves.
5. Representation of a real situation e.g. a diorama or play showing some aspects of rural life.

Functions of three dimensional aids in teaching and extension work

1. It provides concrete and realistic experience from which facts can be discovered.
2. It stimulates imagination and alters attitude
3. It can be used for teaching of functional spare parts of an agricultural equipment or implement e.g. a mock up tractor can be used to teach the process of dismantling and assembling of parts.
4. It is used to clarify abstract ideas e.g. models.
5. It assists in promoting the understanding of facts e.g. a diorama is useful for portraying historical scenes and scenes not easily perceived in real life because of distance from reality.
6. Place where portraits of heroes and heroines are kept.
7. Where pictures, films, filmstrips and slides of agriculture, rural development and natural environment are kept.

8. Should contain standard library with reprographic materials, film recorders projectors e.t.c.
9. There should be specialties and competent technicians as staff.
10. Should also contain lecture rooms and conference hall.
11. Provision must be made for mobile museum unit.
12. Local crafts and industrial artifacts must be kept.
13. Should serve as a youth centre for knowledge development and exposure for youths.
14. In most cases, an education officer should be attached to the museum to serve as a liaison officer between the museum and schools extension and development training centres.

CARE AND MAINTENANCE OF SELECTED AUDIO VISUAL EQUIPMENT AND MATERIALS

- Chalkboard
- Flip chat
- Flannel board
- Projectors
- Microphones
- Radio and Television sets
- Cameras
- Photographs

MUSEUM RESOURCES FOR EDUCATIONAL PURPOSES

A museum is a place with unlimited scope for the preservation of archeological, traditional, historical zoological, botanical and other scientific and agricultural materials permanently.

Museums are developed and set to enable man to see the chronological advancement of his arts and culture and advancement of technology in agriculture and other life endeavors, as well as to do a comparative study of what exists in other cultures.

Functions of museum

1. To collect resources
2. To preserve resources
3. To display resources
4. To elucidate the resources

Museum in Nigeria lack the following:

1. Adequate collection of resources
2. They lack proper linkage with education i.e. not usually used for training purposes.
3. They lack trained personnel
4. They lack adequate facilities
5. They lack necessary funding
6. They lack resources from other African countries and other parts of the world.

If we are to improve museum situation in Nigeria especially for educational purposes, they should be developed to become:

1. Centre for education for people of all ages.
2. Place for presenting exhibitions
3. Place of historical interest

4. Place where one could be introduced to modern Agriculture and industrial machines
5. Place where specimen are kept.

Problems of using three dimensional aids

1. Object may be too small to be studied by the extension class or by the group of farmers involved in the training.
2. When models are used, if care is not taken, a wrong idea of actual size or nature of object may result.
3. Some models could be expensive and out of easy reach.
4. Storage of three dimensional aids is not usually simple to carry out.

AUDIO VISUALS

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 intentently 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 produce 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 and 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.

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 concepts 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.

Class Test

Student will be tested on what has been learnt in the course in the past ten weeks.

Study Questions:

(1) Discuss in detail, the key points you will put into consideration when planning to use an instructional material for a group of trainees. Give relevant examples where necessary.

(2a) Proper use of instructional material at the appropriate time makes the work of the agricultural extension professional real and more concrete. Agree, or disagree with this statement, and support your explanation with relevant examples.

(2b) Make a schematic representation to show the types and categories of training aids known to you.

(3) Cross examine and describe five examples of audio – visual materials you have been taught during the series of lectures you received in ARD 505.

(4a) Explain with examples the term **"Three dimensional aids"** in Agricultural Extension Teaching.

(4b) Enumerate the functions of three dimensional aids and limitations to their use in Agricultural Extension.

(5a) Explain the various levels of learning in relation to the use of audio visual aids in agricultural extension?

(5b) What are the functions of Audio Visual Media and the advantages of Instructional Technology in agricultural extension service delivery in Nigeria?

Reading List:

Abolade, O. A. (1990). Production, Use and Maintenance of Audio Visual in Agric Extension Service in Nigeria. Paper presented during FAO/UNO Workshop on Extension Training Principles and Methods. NAERLS, ABU, Zaria.

Kinder, J. S. (1959). Audio Visual Materials and Technology. American Book C. New York

Oakley, P. and Garforth, C. (1985). Guide to Extension T raining. FAO, Rome.

Onuoha, E. R. and F. N. Nnadi (1998). Fundamentals of Agricultural Extension and Rural Sociology. Sibon Books Ltd, Ibadan, Nigeria.

Yusuf, J. O. (1996). The Preparation and use of Audio Visual. A Paper Presented at a National Workshop on Extension Communication Skill, at NAERLS, ABU, Zaria.

Key for the Reading List:

1 Available in the University Library

2 Available in Bookshops

3 Available on the internet.

4 Personal collections

5 Departmental Library