

Global Media Journal
African Edition
2012 Vol 6 (2)

**INSTRUCTIONAL MEDIA IN TEACHING AND LEARNING: A NIGERIAN
PERSPECTIVE**

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ABSTRACT

The focus of this paper is to discuss the use of instructional media in teaching and learning from a Nigerian perspective. The problem with the use of instructional media has existed since the 1970s after the oil boom era. As soon as corruption and mismanagement of the oil resources became more serious, all other sectors including education were no longer properly funded or given the needed attention for national development. As a result, most lecturers and teachers in many Nigerian tertiary institutions now use the lecture method only in teaching their various courses. The use of this type of method as the sole teaching technique can lead to boredom in learners, lack of learner participation, noise factors that can cause communication breakdown during teaching, learners' mixing up of information, and lack of interest in or attention to the subject matter being taught. Some sources where lecturers can select instructional media for teaching their courses are identified and discussed. It is recommended that the Nigerian government should urgently assist teachers, especially at the tertiary level, in the procurement and use of instructional media through training and retraining, workshops, conferences, etc. in order to fit into the new scientific order of addressing the nation's educational problems.

Keywords: *instructional media, Nigeria, teaching, learning*

I. Introduction

The use of media as channels of communication has been in existence since the stone age when rocks, stones and other objects were used to send messages from the source to the receivers. In Nigeria, sounds produced by gun shots or cannon explosion and sounds from wooden or metallic gongs or talking drums were used as media for announcements, summoning subjects of a particular domain for meetings, communal labours, ceremonies, burials, etc. (Adegbija, 2012). However, the use of instructional media specifically and consciously began in the colonial era when "pieces of apparatus," teaching aids, etc. were

used by the colonial masters to supplement and aid classroom teaching (Onasanya & Adegbija, 2007; Adegbija, 2010). This practice went on until the 1950s and continued during the oil-boom era when teachers were also encouraged to make use of teaching aids to enrich their teaching.

However, the practice drastically changed as a result of inconsistent government policies on education, corruption, mismanagement of oil resources, and the lack of vision of the Nigerian leaders, etc. Consequently, less attention and less emphasis are put on instructional media and on the quality of education as a whole, especially now when the country needs to employ scientific approaches in the teaching and learning processes. According to Fakomogbon (2003), there are other problems that can be identified in relation to instructional media in teaching and learning in Nigeria. These include the following:

- a. The equipment and devices, especially projection media, are expensive to procure. Those procured are usually not adequately maintained due to lack of spare parts.
- b. Electricity supply is not satisfactory even where it is available. For example, many schools in urban areas do not have electricity in the classrooms while many schools in the rural areas do not have an electricity supply at all.
- c. Audio-visual equipment is complex for teachers in our environment to operate because they have no adequate practical training on how to handle most of them.
- d. There is a high rate of equipment breakdown because manufacturers of instructional media rarely take the African climatic conditions into consideration.
- e. Much software of instructional packages developed in Europe and America are inappropriate in African culture (p. 39).

The Nigerian tertiary-institution lecturers train teachers for other levels of the nation's educational sector. Thus, the way instructional media are used at the tertiary level affects other levels as well. It was observed by the present writers during visits to many lecture

rooms and theatres at the University of Ilorin, Ilorin, that the most prominent instructional materials in the classroom and lecture theatres are chalkboards. It was also observed that when meetings, workshops, seminars or university lectures (such as inaugural lectures) take place, resources such as PowerPoint presentations and audio media are usually provided and utilized, but these are not usually found in classrooms for instruction.

Dependence on the chalk-talk method only could create problems known in communication as noise (Hackbarth, 1996; Kemp & Smellie, 1989). Noise in classroom communication is any interference or disturbance arising from dependence on an abstract mode of communication. A breakdown in communication could lead to physical, psychological, linguistic or emotional problems for the learners. In order for the teacher to transmit information, ideas, or skills effectively and to prevent communication breakdown, he should use the most appropriate instructional media to engage the senses actively. This minimizes or eliminates noise factors in the teaching and learning processes (Fakomogbon & Adegbija, 2011).

II. Instructional Media

Instructional media are the human and non-human devices, material or methodologies used by lecturers to overcome all learning problems, including noise factors. The use of instructional media enables lecturers to explain, illustrate, disseminate and deliver their lectures more easily and effectively than when they depend on words only (Hindle, 1998). Heinich, Molenda, Russel and Smaldino (2002) state that properly designed instructional media can enhance and promote learning and support teacher-based instruction.

Table 1 provides a useful guideline on the commonest and most accessible media to assist lecturers and teachers in the use of instructional media for effective teaching and learning.

Table 1

Media Options with Defining Comments

Media	Defining Comments
Real equipment	Actual equipment used on the job. Examples are computers, machinery, laboratory chemicals, and tools.
Simulator	Equipment that incorporates the operating characteristics of real equipment or systems, including the “feel.” An example is the flight simulator.
Training device	Reproduces the essential performance of real equipment but not its appearance or operating characteristics, e.g. a maintenance trainer for electronic equipment.
Computer	Displays text and graphics on screen. It may use animation and sound. Students may interact using a keyboard, mouse or touch screen.
Interactive multimedia	Computer-based text: sound, data, graphics, still pictures, and motion video. They provide random (quick) access to any segment.
Virtual reality	An application of interactive video disc that places the learner in a simulated situation that feels real, even though the learner is actually interacting with a computer screen. Examples are virtual libraries and laboratories.
Radio or TV broadcast	One-way communication of sound or motion picture with sound from a central station.
Motion picture (Film or video)	Visual display with motion and sound capabilities. It may not be interactive but excellent for instruction. Examples are films and videos.
Programmed text	Printed frames of text presented in small steps. It requires frequent responding and provides feedback.
Slide tape or filmstrip	Visual display of still pictures, text, and graphics. Sound capability is not interactive.
Audio poster or chart whiteboard, chalkboard flipchart	Static print media that may include pictures and colour.
Overhead transparencies and slides	Static projected media for text and graphics.

Note: Adapted from “The Conditions of Learning Training Application,” by Gagne & Medsker, 1996, p.182.

The table presents a list of media options and defining comments. These media options have been used in the developed countries to improve the effectiveness of teaching and learning. Thus, even though it may look old it can still be used in developing countries such as Nigeria.

III. Choosing Appropriate Media for a Lesson

Determination of appropriate media for a particular lesson would depend on the mode of instruction such as self-instruction, group-instruction, a combination of both, or direct instruction. In direct instruction (that is, teacher-based), the effectiveness of media depends on relating them to learning objectives. Heinich, et al. (2002) recognized that advanced organizers can be effective instruments for ensuring that media play their proper role as “supplemental supporters of instruction” (p. 12). In the case of self-instruction, media are usually packaged to include learning objectives, activities and self-evaluation.

The use of media will also depend on their level of complexity. Kindle (1998), reviewed by Fakogbon (2011), provides three levels of complexity regarding instructional media as follows: (a) low complexity, (b) medium complexity, and (c) high complexity.

Low Complexity: The advantage of these media is their simplicity and the fact that no power supply is needed for them to work. These include handouts, writing boards, flip chart, etc.

Medium Complexity: These are media which can achieve good effects without involving too much technical hardware. These media include overhead transparencies, slides, audiotapes and sound amplifying equipment.

High Complexity: Media in this category include videotapes, CD-ROMs and computer graphic software. The hardware needed to utilize them for instruction requires a high level of technical capability. Specialists may be required to set these media up for instruction. We can

also find in this category high-tech copy boards. These boards produce reduced-size paper copies of what is written on the board (Heinich et al, 2002).

IV. Sources of Instructional Media for Tertiary Institutions

In a university setup, especially in the developed countries such as the USA and Europe, it has become routine to install medium complexity equipment in almost every lecture room. Equipment and media that are not available in lecture rooms can be procured in Learning Media Centres at short notice. However, the situation is not the same in Nigeria and most developing countries. As stated by Omosewo (1999) and Fakomogbon (2000), for more than a decade schools and colleges in Nigeria have not been serious about establishing resource rooms or installing media equipment in lecture rooms.

It is hoped that things will improve for the better in the future because the present National Policy on Education (Federal Republic of Nigeria, 2004) recommends that modern educational techniques should be increasingly used and improved upon at all levels of the education system. It is also hoped that the implementation of the provisions under the 'educational services' of such policy "will bring about the desired use of modern educational techniques" (p. 9).

Among the goals of these 'educational services' are the development and promotion of innovative, effective materials in schools. In order to achieve this goal, it is recommended by the Federal Republic of Nigeria (FRN) (1998, revised in 2004) that:

- a. Each state and local government authority should establish Teachers' Resource Centers for the development and testing of teaching materials.
- b. Federal and state governments should establish Educational Resource Centers.
- c. There should be a national book policy to devise strategies for book development in the country. Some of the functions of the National Educational Research and Development Centre (NERDC) should be the promotion of the development of books for all levels of

education and the encouragement of indigenous authorship (p. 40).

When these recommendations are fully implemented, it will be easy for lecturers to choose and utilize instructional media. Presently, lecturers can still obtain media to use in teaching from sources such as libraries, Educational Technology Centers, community resources and local productions.

V. Print Resources

Libraries in Nigerian universities mainly store print materials. However, they may even acquire up-to-date printed literature which is expensive and individual lecturers cannot afford. Print resources are also available commercially through publishing houses. At the higher institutions, printed materials are useful because they are readily available, portable, economical and user friendly (Pratt, 1994; Heinich, et al., 2002). These resources are good, but they can be a danger if teachers adhere to them in an inflexible and slavish manner. Lecturers should realize that print materials are not teaching substitutes.

VI. Resources Centers and the Virtual (Digital) Library

A. Education Resource Centers (ERCs)

Some states such as Kwara and Lagos have Educational Resource Centers (ERCs). Their functions include storage of material and media equipment which schools and colleges can procure (borrow) for instructional purposes. These Resource Centers may also provide and give directions regarding accessibility to educational and instructional media (Adegbija, 2010). In addition, in order to ensure the development and testing of the media, the ERCs are responsible for inter-disciplinary cooperation, interactions and transfer or exchange of knowledge by lecturers from various disciplines (FRN, 1998). It is expected that ERCs should have the following functions:

- a. Storage and retrieval of books and non-print materials.
- b. Updating lecturers and students on the current development in their various

disciplines.

c. Provision of information on available instructional media and methods.

B. The National Educational Technology Centre (NETC) and Educational Technology Centers (ETCs)

Lecturers of tertiary institutions can also acquire instructional media from the National Educational Technology Centre which has, among others, the following functions (Nwamadi, 1988):

- a. Development, production and distribution of audiovisual aid equipment and materials for use in educational institutions in the country by capitalizing on local talents and materials.
- b. Establishment of a National Educational Resource Library of equipment and materials for dissemination throughout the country.
- c. Assessment, evaluation and classification of imported instructional materials and equipment marketed in the country (pp. 257-258).

Instructional media can also be procured from Educational Technology Centers (ETC) or Centers for Educational Technology in Colleges or Faculties of Education or, in some cases, Institutes of Education in Nigerian universities. These names are interchangeably used in most Nigerian higher institutions. However, some universities go by the name Educational Technology Centers (ETC) while Colleges of Education use Centers for Educational Technology (CET). Teacher training is carried out in Faculties or Institutes of Education in the universities, but Colleges of Education specifically train teachers.

For example, a typical CET or ETC is expected to acquire, produce and store instructional resources to facilitate teaching and learning (National Commission for Colleges of Education, 2002). At the University of Ilorin ETC, lecturers supervise students in the design and production of instructional materials such as white boards, magnetic boards, models and

videotapes. Some of these are stored so that lecturers and students can use them for instruction. Instructional equipment such as overhead projectors, videotape monitors and recorders, slide projectors and audiotape recorders can be loaned out for teaching and learning within the university environment.

Instructional videotapes and audiotapes can also be produced by the technical and academic staff of the Educational Technology Centre, University of Ilorin. Some ETCs provide within their universities closed circuit televisions. This is done in the Obafemi Awolowo University, Ile-Ife and the University of Benin City. It is hoped that the ETCs will be able to provide cable televisions for their universities in the near future. According to Heinich et al. (2002), cable television is a television distribution system consisting of a closed-circuit, usually wired, network for transmitting signals from an original point to members of the network. Typically, the origination point receives and retransmits broadcast programs, adding recorded programs and/or some live originations.

C. Virtual/Digital Library

The Virtual (Digital) Library of the Federal Ministry of Education is also another good source from which to get instructional media from the global village. According to Onifade and Egunjobi (2003), a virtual library is a type of library operated digitally where computers and telecommunication technologies are used to access a wide range of information resources. It can also be referred to as a digital library, electronic library, community network, or library without walls. According to the National Universities Commission (2002), it is called 'virtual' because in a good electronic wide-area network library, the user enjoy being in distant libraries, and yet he has not physically moved. The major objectives of the first phase of the National Virtual Library projects are the following:

- a. To improve the quality of teaching and research in institutions of higher learning in Nigeria through the provision of current books, journals and other library resources.

- b. To enhance access of the academic libraries, serving the educational community in Nigeria to global libraries and information resources.
- c. To enhance scholarship, research and life-long learning through the establishment of permanent access to shared digital archival collections.
- d. To provide guidance for academic libraries on applying the appropriate technologies used in the production of digital library resources and to advance the use and usability of a globally distributed network of library resources (Onifade & Egunjobi, 2003, pp. 182-186).

The virtual library services are delivered through the Internet, CD-ROMs and Wide Area Network (WAN).

D. Community Resources

Instructional media could also be provided within the community. Abolade (2004) states that community resources can supply additional learning experience to that acquired in the classroom environment. Persons such as private citizens, doctors, lawyers, engineers, police, teachers, etc. could provide valuable instruction through personal contact, the mail, telephone or computer networks.

Field trips involve excursions to such places as museums, hydroelectric power stations, zoos, banks, and media houses. Such visits make it possible for students to encounter phenomena that cannot be brought into the classroom for observation and study (Heinich et al., 2002). Modern computer technology has also made possible what is known as virtual field trips which enable students to experience the sights and sounds of a far away location from their home or school (Hackbarth, 1996; Gifford, 1999).

E. Public and Commercial Sources

From time to time, the federal and state governments may procure instructional media such as textbooks and educational videotapes and films. A typical example is the book

distributed through Petroleum Trust Fund (RTF) to schools, colleges and universities. In the mid-eighties, the then federal military government procured laboratory equipment for Junior Secondary School Introductory Technology. Recently, the German government donated equipment for the chemistry laboratory of the University of Ilorin. Much instructional media could also be sourced through the British Council and other foreign government agencies such as the United States Agency for International Development (USAID).

Available also are educational and instructional CD-ROMs, videotapes and films on almost any subject. These can be bought from commercial vendors. Instructional CD-ROMs contain reference materials such as encyclopedias, dictionaries, catalogs and directories (Hackbarth, 1996).

F. The Internet

Internet Explorer, which can be likened to a window on the world, is a browser which helps researchers to view, browse or navigate websites. The Internet allows teachers and students to access information from its sources such as databases and libraries (Yusuf, 2004; Heinich et al., 2002). Gifford (1999) also states that many museums, libraries, and art galleries put part or all of their collections on the Internet. Computer users anywhere in the world can view these collections on their screens by simply visiting the appropriate websites.

Whole course instructions could be provided through the Internet. Instruction and information are delivered by means of a variety of media such as text, audio, graphics, animation and video. Information gathered from the Internet is up-to-date. Heinich et al. (2002) agree that the web has dissolved the artificial wall between the classroom and the world beyond, making it possible for students and teachers to access information and people from every imaginable source.

G. Local Sources

Lecturers at tertiary institutions should not overlook local and readily available instructional media such as pictures, real objects or realia, models, chalkboards, writing and display boards such as flannel boards and magnetic boards which could be fabricated locally if the commercial types are not available. Flat visuals can also be made locally. Skills in basic drawing, lettering and photography are needed (Kemp & Smellie, 1989). However, Hindle (1998), and Onasanya and Adegbija (2007) recommend that if we do not have the time, knowledge, or the creative talent to prepare personal audio-visual aids, we should employ the services of experts such as the support staff, a colleague, or external design agency to do it. Choose your helpers carefully and present them with a tight brief to prevent any misinterpretation regarding the desired final product.

VII. Conclusion

This paper focuses on the use of instructional media in teaching and learning from a Nigerian perspective. Lecturers should note that instructional media are to be used not only to supplement teaching and learning but to make them more exciting, scientific or technologically-oriented. Lecturers in higher institutions need sound educational practice with regards to the methodology of teaching because they produce teachers for other levels of the educational system. Thus, it is their responsibility to do the following:

- a. Determine appropriate teaching methods.
- b. Provide suitable instructional media which will fit in the implementation of these method(s).

Based on the discussion in this paper, it is suggested that:

- a. Lecturers and students should be more exposed to the use of every form of instructional media through training and retraining whether at the local or international setting.

b. The government should encourage the use of instructional media for teaching and learning by implementing all its policies as well as procuring and providing enough and appropriate media for the lecturers.

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