

**TEACHING  
STRATEGIES  
FOR  
NIGERIAN  
SECONDARY  
SCHOOLS**

edited by

*Samuel O. Ayodele*

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**edited by**  
**Samuel O. Ayodele**  
**(NCE., B. Ed., M.Ed., Ph. D.)**

*Professor of Language Education, University of Ibadan*

Geography Teaching - *E. A. Oluwalagbe*

Modern Trends in Economics Teaching at

the Secondary School Level - *E. O. Oluwalagbe*

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## **Teaching Strategies for Nigerian Secondary Schools**

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# **Ch. Educational Technology**

## **6 in the Service of the Secondary School Teacher**

~ Osa Felix Ibode

*Institute Of Education, University Of Ibadan*

Educational technology is not merely man and machine, as some people would like to assume. Rather, it is the systematic application of scientific or organized knowledge to practical tasks and problems in education (Heinrich, 1978). In addition, educational technology is a system approach or process of effectively and efficiently achieving the required outcomes based on logical problem solving process similar to scientific method (Obiawu and Azubike 1994).

According to Ogunranti (1981), there are three major ages, up to date, in the development of educational technology, namely the Stone Age, the book age and the mass communication age. The Stone Age was characterized by the utilization of stone surface as a means of communication by man. During this period, smoke, gun sound, drum, flute, etc., were also employed as means of communication.

The book age began at about 1456 (A.D.) when a German called Johann Gutemberg produced the first printed Bible, following his invention of the printing machine at about 1445. This was the period when textbooks and chalkboard formed the bulk of educational tools for conveying messages to pupils.

This era was important because it was the beginning of the era when teachers were regarded as the only harbingers of knowledge – the book era brought with it reading materials, which enabled people to seek for

## O. F. Ibode

knowledge through reading. The book era was the period of Renaissance, which witnessed the revival of learning in Europe.

The 17<sup>th</sup> Century ushered in the great thinkers and educators such as John Amos Comenius (1652-1670) who wrote the book, "Orbis pictus" (The World in Picture) in which he outlined the plan of graded education and principles of motivation through interest and sense of perception as the basis of understanding (Abimbade, 1997). This period also witnessed the emergence of Rousseau (1712-1778) who advocated child-centred education, Maria Montessori (1870-1952) who also facilitated the Educational Technology in the area of teaching children and the handicapped. According to this woman, instruction "should be adapted to the stage of development of the pupil and so environment should be similarly adjusted".

Her principles of teaching involved:

- (a) exercise in practical life, and
- (b) sensory training and didactic.

The Mass Communication age ushered in the evolution of sophisticated educational tools like the computers, radio, TV, tape recorder, CD, etc. Technologists up till this moment are still improving on and perfecting the above mentioned tools, some of which have turned the world into a global village.

### **Educational Technology In Nigeria**

The Education Ordinance of 1930 in Nigeria recommended that schools approval be granted to schools after adequate and proper inspection. The ordinance also required that schools should have adequate teaching apparatus. In 1954, a school-broadcasting unit was established in Kaduna by the Northern Nigeria Government, using the facilities of Nigeria Broadcasting Services (NBS).

The Northern and Western Regions of Nigeria established units of schools broadcast in their Ministries of Education. The era of audio-visual however found its way into Nigeria in 1959 through Wireless Radio and Television Station in Ibadan. These channels were used to disseminate educational information to primary schools, secondary schools and teachers' colleges. Furthermore, 1977 witnessed the establishment of the National Educational

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Technology Centre (NETC) at Kaduna. Also, by 1962, Audio-Visual Centres found its way into the Ministries of Education in Nigeria, following the assistance rendered to these ministries by the United States Agency for International Development (USAID).

But in 1963, the Institute of Education University of Ibadan, with the assistance of the United Nations Educational Scientific and Cultural Organization (UNESCO) established an audio-visual unit. The first 'programmed instruction' workshop was hosted in 1963 at the Institute of Education, University of Ibadan (Abimbade 1997).

### **What Is Educational Technology?**

Educational technology could be viewed from two functional perspectives, namely: "technology in education" and "technology of education", and both are within instruction system. According to Abimbade (1997), technology in education and technology of education are interrelated and they "have distinctive historical conceptions which can be called the physical science or device concept and the other as the behavioural science concept". Thus, the physical science concept which is technology in education comprises largely of hardwares like slide, overhead, opaque, filmstrip, projectors, television, film, radio, cameras, cassettes, teaching machines, computers, etc.

The behavioural science theory, that is "technology of education" is drawn from psychology, education, arts and other humanities. This is based on the premise that relevant knowledge in all areas of education may be harnessed in a systematic design, based on psychological principle to solve problems of learning and instruction. Thus, educational technology could be diagrammatically defined as: (see figure 1, next page).

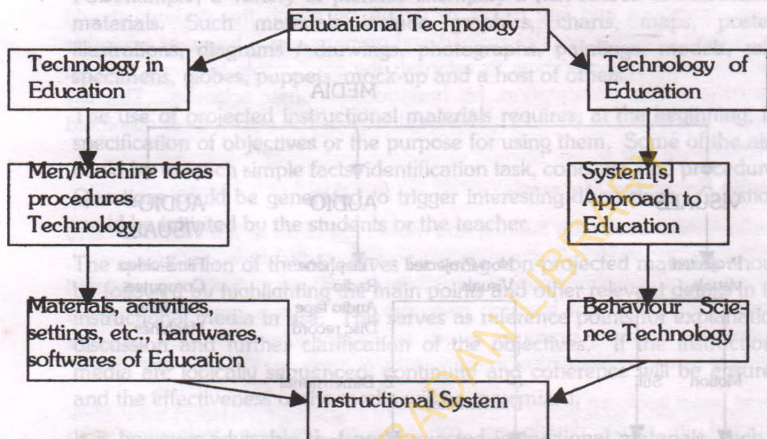
### **Educational Technology At The Secondary School Level**

Educational Technology has a major role to play in the new national policy of education with reference to the 6-3-3-4 education system, i.e. 6 years of primary school, 3 years of junior secondary school (JSS 3), 3 years of senior secondary school (SS 3).

The 6-3-3-4 educational system is designed to equip individuals with a more meaningful education, which emphasizes academic training and practical



skills. This is with the intention of producing individuals that are more functional and self-reliant in the society.



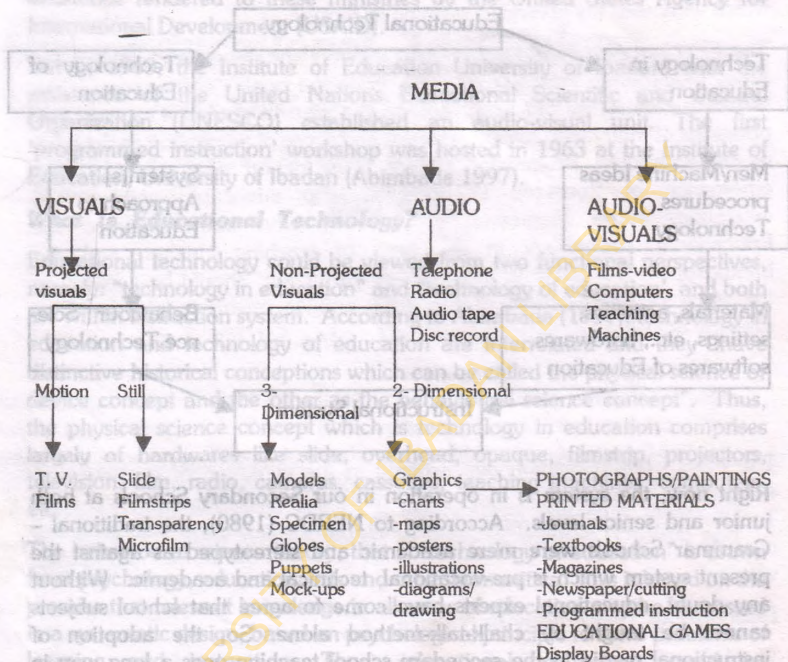
Right now, the system is in operation in our Secondary Schools at both junior and senior levels. According to NERDC (1980), the traditional – Grammar Schools were mere academic and stereotyped as against the present system which is pre-vocational, technical and academic. Without any doubt, educational experts have come to agree that school subjects cannot be taught by chalk-talk-method alone. So, the adoption of instructional media in the secondary school teaching goes a long way in reducing problems in teaching and learning situation in our schools. Learners are expected to be involved in learning sequence while teachers are expected to employ the use of real things where they are available or adopt the mechanical representation of real things or situations where they cannot be found.

A resourceful teacher is one who when faced with a problem, considers different solutions and decides on the most suitable one. In the process of doing this, he considers all possible resources, materials and equipment necessary for solving such problem. In other words, a resourceful teacher who uses educational technology approach, sources for materials, which

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enhance teaching and learning. Such teachers also remodel imported teaching aids to suit his local environment.

### Instructional Media In The Secondary Schools (See Figure 2)



### Non Projected Media

According to Kindler' (1973) people generally remember:

10% of what they read

20% of what they hear

300/o of what they see

50% of what they hear and see

70% of what they say

90% of what they say as they do a thing.

Instructional media therefore provide the learner with meaningful, accurate, or mechanical representation of real experiences, information or objects. For example, a variety of pictures exemplify a rich source of instructional materials. Such materials include graphics, charts, maps, posters, illustrations, diagrams / drawings, photographs, paintings, models, relia, specimens, globes, puppets, mock-up and a host of others.

The use of projected instructional materials requires, at the beginning, the specification of objectives or the purpose for using them. Some of the aims could be to teach simple facts, identification task, concepts, and procedures. Questions could be generated to trigger interesting discussions. Questions could be initiated by the students or the teacher.

The specification of the objectives for using non-projected materials should be followed by highlighting the main points and other relevant details in the instructional media in use. This serves as reference points for explanation, discussion and further clarification of the objectives. If the instructional media are logically sequenced, continuity and coherence will be ensured, and the effectiveness of the media will be maximized.

It is however advisable that non-projected instructional materials, such as pictorial materials on display should not be left for too long – this is more so when the focus of discussion has shifted from the materials on display. It is equally carefully selected and sequenced, based on specific objectives, the teacher must be highly motivated, well-organised and fully committed to the use of these instructional materials (Akanbi 1988).

### **Projected Media**

The use of projected materials such as slides, filmstrips, transparencies, microfilms, T.V, films, etc., is functionally based on pre-determined specific instructional objectives and detailed task analysis. The user of projected visuals is expected to include, in his planning stage, an advance visit to the classroom or auditorium where the material and equipment would be used. The advance visit will afford the presenter the opportunity to rectify some electrical plugs and cables in the classroom or auditorium, which might not be functional. Moreover, it is during such a visit that effort would be made to provide curtains or projection screen that do not require total darkness.

## Ch. 6: Educational Technology in the Service of the Teacher

According to Akanbi (1988), a preview of projected materials is a desirable activity because it ensures proper sequencing of learners' activities. It is during the preview session that supplements such as handouts for guided study, questions and key points or details on which the students should focus their attention are determined and prepared. It is however advisable that the teacher remembers to establish the relationship between his oral teaching, media presentation, his handout and other activities. This will enable the students have a meaningful experience rather than disjointed activities.

### **Audio Recorded Materials**

Audio-system deals with hearing and makes use of air as a medium to carry audible information. Audio materials include radio, tape recorder, voice, talking drum, earphone, speakers, disco record, etc. Audio instructional media form important learning resources that have a great potential for diversifying teaching strategies in our secondary schools as they could be used for recorded instruction in many subject areas.

Some years back, an instructional strategy, the radio-vision, was commonly adopted in some developing countries to replicate instruction/radio programmes in science and adult education. These programmes were supplemented with pre-distributed printed or projected materials. Audio-recorded materials could be useful in the classroom situation where classroom population has been on the increase in recent years. There are several media companies with commercially produced audiocassette instructional programmes in different subject areas. These tapes could be locally replicated for classroom use.

Also, innovative and imaginative teachers can originate the production of audiotaped instruction.

### **Audio Visual**

These are instructional aids that appeal to both senses of hearing and seeing. They include video set, sound movie, filmstrip with synchronized sound, films (motion pictures with sound track), computers, teaching machines etc. Audiovisuals are important tools. For effective learning. They provide the students the opportunity of simultaneously hearing, seeing, an watching the activities on the screen.

Computer Assisted Instruction (CAI) is at present being utilized as a means of enhancing instructional strategies in some countries where computer education has become the order of the day. Computer Assisted Instruction. (C.A.I.) is an automated instructional technique in which a computer is used to present an instructional programme to students through interactive process on computer (Abimbade 1997). It is however regrettable that at this moment when computer has become a hardy tool in instructional technique all over the world, secondary schools in Nigeria are at the mere level of computer appreciation and computer literacy.

It is however hoped that in the years ahead, the numerous advantages of computer education will be fully harnessed and utilized in our secondary schools, especially in the area of Computer Assisted Instruction (CAI).

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