



# An Assessment of new Methods and Techniques in Teaching and Learning in Nigeria towards Sustainable Development Goals.

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## ABSTRACT

*The 1950's and 1960's were eras of absolute faith in education as a major instrument of social or economic development. This saw the unprecedented curriculum development efforts geared towards a new interpretation of the role of education in development, this was so, as many developing countries at that time were getting independence from colonial administration. Thus, the changing economic, social and political situation in both developed and developing countries combined to create needs for constant innovations and reforms in education. Due to this new social configuration it is necessary that new ideas and needs have emerged in which the former system is no longer adequate. This is more so as by early 1970's to date there is general agreement among politicians, educational and social plainness, and schools that education is a key change agent for moving societies towards development. Within this context expanded and improved educational provision became a focus of development efforts, especially in developing countries as a means of acquiring new teaching methods. The rationale behind this paper is the evident failing of the educational system in response to new methods and techniques in teaching and learning. The primary obstacle to the introduction of new teaching methods and*

*techniques into the system was partly the inertia of the educational system itself and partly the inability of government to muster the sum of money required to provide teaching instructional aides.*

Keyword:

Techniques, Methods, Technology, and Sustainability.

## **Introduction**

The primary business of any educational institution is to teach so that the students can learn. This statement presupposes that teaching is a precondition for learning.

Therefore, if teaching is ineffective learning will also be ineffective. The best option is to have effective teaching so that there can be effective learning.

The task of teaching is a complex one which must not be taken for granted. Every teacher should have realized by now that gone are the days when a teacher was seen and regarded as the only source of information which must be pumped unlimitedly, unchallenged and recklessly into the heads of his students. That is to say that the days of the all-knowing teacher are gone, especially with the rapid explosion of knowledge and the attendant scientific technological developments which have taken place over years.

Education encounters in modern times, challenges in all aspects of social economic and cultural life, the most important of which are over-population, over-knowledge, education, philosophy development and change of teacher's role, the spread of illiteracy, lack of staff and the technological development and mass media (Aloraini, 2012).

This drove the modern teaching staff to use the modern teaching technologies to face some of the main problems, which education and its productivity encounter, by increasing the learning level which may be achieved through providing equivalent opportunities for all people whenever and wherever they are, while taking into account the individual differences between learners (Lar, 1997). Therefore to "improve the educational productivity, some of the teaching staff sought to mainstream technology within education, developing traditional techniques and using new educational methods. (Aloraini, 2012).

Mainstreaming is the technological media within what is called "multimedia" is the pattern which led to infinite applications of computer technologies. The concept of this technology came into being with the appearance of sound cards, then compact disks, then came the use of digital camera, then the video which made computer an essential educational tool. Nowadays, multimedia expanded to become a field on its own. The concept of multimedia technology is broad and it has infinite usage fields; it is a profound element as an educational technology in addition to its use in medical and statistical domains and in establishing databases. Moreover, the

entertainment sector is one of the sectors that have the lion's share in using this technology. Interaction is the main element in multimedia technology as most of its application is characterized by interaction.

Consequently, multimedia programs many provide a more effective and more influential experiment than using each technology separately.

The multimedia method of teaching is one of the best educational techniques in learning because it addresses more than one sense simultaneously as it addresses the senses of sight and hearing. Multimedia programs provide different stimuli in their presentations which include a number of elements some of which are; Text, spoken words, sound and music, graphics, animations and skill pictures.

These elements were mainstreamed in a comprehensive presentation so as to provide effective education, which in turn will support the participation of the different senses of the learners in diverse syllabi (Alaku,1998). These developments have resulted in the existence of a variety of resources, materials and equipment which can now be used to supplement or complement the teacher's efforts in ensuring effective learning by students. It is instructive to note here that when such materials and equipment are used by the teacher to transmit information to students they are called instructional media. However, when they are called learning materials equipment. These resources are commonly and collectively called instructional media.

### **What are Instructional Media?**

Modern education is characterized by a lot of problem which have necessitated the use of innovative teaching learning system. By innovative teaching; learning system is meant an organized combination and utilization of people materials facilities, equipment and procedures which interact to achieve the desired instructional goals or objectives. Usually, the need for meaningful investment in education is the basis for such innovative learning system which requires more than the traditional teacher to directly transmit information to the learner. In short, a modern learning system involves basic innovational in both contents (materials) and methodology, especially through audio-visual instruction which is essentially "that field of human expression that employs visual and auditory aids to learning, including motion pictures, television sound and silent filmstrips, slide sets, recordings, transparencies, projections, and a variety of graphic arts. (Imogie,2001). In the context of this paper instructional media is the same thing as educational media which means the media born of the communication revolution which can be used for instructional purposes alongside the teacher textbooks and the blackboard (Imogie, 2001).

### **Categories of Instructional Media**

There cannot be one standard way of classifying instructional materials for there are as many classifications. However, instructional media are universally classified according to their characteristics. Thus, the most popular classes of instructional media are as follows:

S/No		
1.	Materials	Textbook Chalk pen Newspapers chemicals Flip charts Pictures posters etc
2.	Equipment	Radio sets Projector Cameras Computer set Television set Video recorder etc.

It is necessary to state at this point that the use of instructional media in the teaching-learning process. In Nigerian, schools cannot be said to be totally new. Evidence exists when materials such as Sticks marbles, Pegs, Cowries, Heads Pebbles, Rocks and seeds were used extensively in teaching and training in schools (Imogie 2001). What are perhaps relatively new are the technological innovations and products such as Television, Radios, Computers and Telephones which are new being used in the teaching-learning process in Nigerian schools.

### Utilization of Educational Media

The effective selection of educational media may not provide the desired instructional efforts unless there is a corresponding effective utilization based on the following basic media utilization plan.

- Prepare yourself i.e. obtain/select and preview the materials in relation to the objectives and contents.
- Prepare the environment i.e arrange the necessary materials and equipment in the place of utilization, and ensure an effective and efficient setup.
- Prepare the class (learners) i.e brief the class, introduce the materials and tell them what is expected of them etc.
- Use the media i.e Teach and use them with commentaries

## Instructional Media Support Facilities

Optimization of instructional media on the teaching-learning process cannot be effective, unless there exists a minimum and tolerable level or quantity of the following support facilities

- i. Lecture hall
- ii. Discussion rooms
- iii. Laboratories
- iv. Studios
- v. Media Resources Centre
- vi. Electronic Learning Centre
- vii. Electricity power supply e.t.c

## Benefits of Instructional Media

The study emphasizes in the need for and use of instructional media in Schools, Colleges, Universities and the various training institutions which lies in the fact that they are useful. The Presidential Commission on Instructional Technology (1970) stressed that the basic assumption about instructional media (both hardware and software) is that they can be used to improve teaching and learning.

One basic rationale for the use of instructional media in the teaching- learning process is that they possess the ability to stimulate the learners through both the auditory and visual controls. According to Adamu (1999):

*Teaching at any level requires that the student be exposed to some form of stimulation. Learning cannot take place in vacuum... the instructor must be able to produce stimuli having enough strength and definition to get through to the student... the student must notice and/or hear something. In a large classroom or auditorium students in the back rows must be able to hear and if there is something to see, they must be able to see it. By the use of modern technology we can control the size of the visual image and the amplitude of the sound. We can control rate of apparent motion or show inaccessible things or those that are remote in space or time.*

According to Imogie (2001), in a general sense, there are basic assumptions about the potential contributions of audio-visuals to the psychology and general principles of learning. These basic assumptions include that audio-visuals can be used to:

- i. Provide increased interest in learning.
- ii. Get and hold the learner's attention
- iii. Reinforce verbal messages
- iv. Bring experts and multi-resources to the classrooms
- v. Allow all members of a group or class the opportunity to share joint experience.

- vi. Provide for a direct interaction of students with the realities of their social and physical environment.
- vii. Provide objectivity for the study of a delicate or controversial subject.
- viii. Show inaccessible processes, materials, events, things and changes in time, speed and space.
- ix. Illustrate and clarify non-verbal symbols and images, quantitative relationships, complex relationships, abstract concepts, spatial relations and special details.
- x. Promote greater acquisition and longer retention of factual knowledge.
- xi. Provide opportunities for independent and individualized learning.

In a utilitarian sense, instructional media have significant roles to play in the teaching-learning process. First, from the **perspective of teaching**, according to Imogie (1989), instructional media can be used to:

- i. Provide the teacher with a means for extending his students' horizon of experience
- ii. Help the teacher to provide his students with meaningful source of information.
- iii. Provide the teacher with interest-compelling spring boards which can launch students into a wide variety of learning activities.
- iv. Help the teacher to overcome physical differences of presenting subject matter.
- v. Multiply the teacher's efficiency in providing tutorial stimuli and response guidance for individual students and small groups.
- vi. Provide the teacher with tools to carry out diagnostic testing, research and remedial work.
- vii. Bring experts and multi-resources to the classrooms
- viii. Allow all members of a group or class to share equally from the same teaching experience.
- ix. provide objectivity for the teacher of a delicate and/or controversial subject-matter
- x. Classify and illustrate non-verbal symbols and images, quantitative relationships, complex relationships, abstract concepts, spatial relationships and special details.

From the **perspective of learning**, Imogie (1999) says that instructional media can be used to:

- i. Provide increased interest in learning.
- ii. Hold the learner's attention.
- iii. Provide the learners the opportunities of direct interaction with the realities of their social and physical environment.
- iv. Provide the learners with the opportunities for independent and individualized learning.
- v. Supply concrete basis for conceptual thinking and hence reduce meaningless word responses by learners.
- vi. Promote greater acquisition and longer retention of factual knowledge
- vii. Offer rich opportunities for learners to develop their abilities and skills
- viii. Offer a variety of experiences which stimulate self activity on the part of the learners.

Finally, most instructional media are basically educational materials which can also be seen in the context of visuals and, therefore, in terms of their contribution to the visualization of the instructional processes

### **Innovative Methods of Teaching**

Basically teaching must include two major components sending and receiving information. Ultimately, a teacher tries his best to impart knowledge as the way he understood it. So, any communication methods that serve this purpose without destroying the objective could be considered as innovative methods of teaching. The use of innovative methods in educational institutions has the potential not only to improve education, but also to empower people, strengthen governance and galvanize the effort to achieve the human development goal for the country. Education is a light that shows the mankind the right direction to surge. The purpose of education is not just making a student literate but adds rationale thinking, knowledgeable and self-sufficiency. When there is a willingness to change, there is hope for progress in any field. Creativity can be developed and innovation benefits both students and teachers. Education is a light that shows the mankind the right direction to surge. If education fails to inculcate self-discipline and commitment to achieve in the minds of student, it is not their fault. We have to convert education into a sport and learning process has to generate interest in the students and motivate them to stay back in the institution than to run away from it. Education should become a fun and thrill to them rather than burden and boredom. It is an integral part of their growth and helps them become good citizens. Education is an engine for the growth and progress of any society. It not only imparts knowledge, skills and inculcates values, but is also responsible for building human capital which breeds, drives and sets technological innovation and economic growth. In today's era, information and knowledge stand out as very important and critical input for growth and survival. Rather than looking at education simply as a means of achieving social upliftment, the society must view education also as an engine of advancement in an information era propelled by its wheels of knowledge and research leading to development.

The traditional or innovative methods of teaching are critically examined, evaluated and some modifications in the delivery of knowledge is suggested. As such, the strengths and weaknesses of each teaching methodology are identified and probable modifications that can be included in traditional methods are suggested.

### **An Evaluation of Traditional and Multimedia Learning: *Traditional Method – A One Way Flow Multimedia Learning – An Interactive Learning***

#### **Traditional Teaching Method**

In the pre-technology education context, the teacher is the sender or the source, the educational material is the information or message, and the student is the receiver of the information. In terms of the delivery medium, the educator can deliver the message via the “chalk-and- talk” method and overhead projector (OHP) transparencies. This directed instruction model has its foundations embedded in the behavioral learning perspective (Adams, 1977)

and it is a popular technique, which has been used for decades as an educational strategy in all institutions of learning. Basically, the teacher controls the instructional process, the content is delivered to the entire class and the teacher tends to emphasize factual knowledge. In other words, the teacher delivers the lecture content and the students listen to the lecture. Thus, the learning mode tends to be passive and the learners play little part in their learning process (Azuh et al.,2014). It has been found in most universities by many teachers and students that the conventional lecture approach in classroom is of limited effectiveness in both teaching and learning. In such a lecture students assume a purely passive role and their concentration fades off after 15-20 minutes. Some limitations which may prevail in traditional teaching method are Teaching in classroom using chalk and talk is “one way flow” of information.

### ***SENDER (TEACHER) - MESSAGE MEDIUM - RECIEVER (STUDENT)***

Teachers often continuously talk for an hour without knowing students response and feedback.

- The material presented is only based on lecturer notes and textbooks.
- Teaching and learning are concentrated on “plug and play” method rather than practical aspects.
- The handwriting of the lecturer decides the fate of the subject.
- There is insufficient interaction with students in classroom.
- More emphasis has been given on theory without any practical and real life time situations.
- Learning from memorization but not understanding.
- Marks rather than result oriented.

### **Innovative Tools Multimedia Learning Process**

Multimedia, is the combination of various digital media types such as text, images, audio and video, into an integrated multi-sensory interactive application or presentation to convey information to an audience. Traditional educational approaches have resulted in a mismatch between what is taught to the students and what the industry needs. As such, many institutions are moving towards problem based learning as a solution to producing graduates who are creative; think critically and analytically, to solve problems. In this paper, we focus on using multimedia technology as an innovative teaching and learning strategy in a problem-based learning environment by giving the students a multimedia project to train them in this skill set.

Currently, many institutions are moving towards problem-based learning as a solution to producing graduates who are creative and can think critically, analytically, and solve problems. Since knowledge is no longer an end but a means to creating better problem solvers and encourage lifelong learning. Problem-based learning is becoming increasingly popular in educational institutions as a tool to address the inadequacies of traditional teaching (Boud & Feletti, 1999). Since these traditional approaches do not encourage students to question what they have learnt or to associate with previously acquired knowledge, problem-based learning is seen as an innovative measure to



encourage students to *learn how to learn via real-life problems* (Boud & Feletti, 1999). The teacher uses multimedia to modify the contents of the material. It will help the teacher to represent in a more meaningful way, using different media elements. These media elements can be converted into digital form, modified and customized for the final presentation. By incorporating digital media elements into the project, the students are able to learn better since they use multiple sensory modalities, which would make them more motivated to pay more attention to the information presented and retain the information better.

### **Problems of Instructional Media in Nigerian Schools**

In spite of the numerous advantages and benefits which the teaching- learning process can derive from Instructional Media, the innovation appears not to have been effectively integrated into Nigerian Schools. This situation is due to numerous problems which can be broadly classified into (a) *what to use*, (b) *where to get what to use*, and (c) *how what is available can be put into effective utilization*.

In general, the problems facing the effective utilization of Instructional Media in Nigerian schools include the following:

- (a) There is a general misconception about Instructional Media. For example, there is a general teachers' fear about the instructional Media especially as teachers see Instructional Media as an erosion of their world-wide age-long monopoly of knowledge and its transmission. Similarly, there is the misconception that Instructional Media are meant for entertainment and social functions mainly and not for education. Incidentally, this misconception is strongly reinforced by the school administrators themselves.
- (b) The cost of Instructional Media equipment and materials are usually high and sometimes prohibitive. In a situation of meagre financial allocations, the innovation is bound to suffer due to the lack of adequate number of equipment and materials occasioned by poor and irregular funding.
- (c) There is a general lack of infrastructural facilities for Instructional Media in most schools. Apart from the availability of traditional classrooms, Instructional Media requires adequate and additional spaces for the design, production and utilization of Audio-visual materials and equipment. There is also need for storage facilities. The classrooms are expected to be regularly lit with electrical outlets, project or screens, acoustic walls and carpeted floors.
- (d) There is a general shortage of instructional Media equipment and materials due to financial constraints and importation problems as most of the new media are produced outside Nigeria. Besides this general shortage, there is a lack of basic information about the available ones.
- (e) The nature of examination or evaluation which are highly paper and pencil oriented tends to inhibit the extensive or intensive use of Instructional Media during the teaching-learning process.
- (f) There is the problem of non-availability of professional and technical staff who can help the teachers in the effective use of instructional Media in the teaching-learning process.

## Conclusion

The importance of teaching and learning materials cannot be overemphasized in the instructional process. For the materials to achieve the purposes for which they are used, efforts must be made to ensure that they are acquired by any of the means suggested above. More importantly, all acquired or available materials must be adequately utilized. Ways of optimizing the use of materials have been presented. It remains for schools and teachers to take steps to ensure proper implementation of our suggestions. When teachers are rewarded for effectively utilizing materials others will be encouraged to do same.

As we approach 2030 all levels of the Nigerian Educational System must respond to change in world community of which we are more than ever a part and make fullest utilization of all means of modern communication. We must be future oriented whether we like it or not and henceforth embrace and evolve the modern school concept that is the world norm. We must consciously employ already existing new materials, New method of instruction and New administrative procedures, to increase the Breadth, Rate, Equality and Relevance of education all levels.

## Recommendations

When a practice is considered mandatory on all professionals a policy is enunciated to lend a legal backing to the practice. School administrations in the developed parts of the world establish policies to guide the effective implementation of various practices in their schools. For example, policies exist on admissions, teaching and learning, reading, examinations, and many other activities in the schools (Mkpa, 1999). We believe that schools in Nigeria can establish a policy on the use of teaching and learning materials. Such a policy may, among other things, demand that:

- Schools (teachers and learners) should take steps to develop useful teaching and learning materials for various school subjects.
- Materials supplied by Government must be preserved to guarantee protection from all forms of destruction and theft.
- All teaching should involve the use of relevant instructional materials in order to reduce verbalization and increase the use of other senses.
- Children at all age levels should participate in the production of pictorial materials and models which should be displayed.
- Records of all instructional materials supplied to the school should be kept.
- Materials borrowed by individuals and other institutions must be returned at the appropriate time.

The above example should guide schools to formulate policies that will induce teachers to use materials effectively otherwise the potentials of materials may not be achieved.

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