

INNOVATIVE INSTRUCTIONAL STRATEGIES

SAIDU, Tukura C.

Department of Science Education
Federal University of Technology, Minna

Abstract

Innovative instructional strategies are simply teaching methods or techniques rooted in the psychological principles of operant conditioning developed by B.F. Skinner, and based on programmed instruction. They (strategies) directly reinforce academic work, provide immediate and accurate responses to questions, and structure the learning environment in such a way that the learners (students) could have full control of the environment and make sensible and rational decision on what should be done. The instruction is therefore, programmed. In this paper, four strategies are selected and reviewed: Discussion method, discovery method, individualized instruction method, and open education method. The modern advanced technology required for the effectiveness of each of these methods is suggested; and recommendations for effective adaptation of ICT facilities in schools are made.

Introduction

Teachers are faced with the monumental task of impacting knowledge on students in all levels of education. They have to engage in essential exercises that enhance the skills of learning and teaching. According to Lawal (2007: p1), "They must be willing to enter into the spirit of new African age, willing to share new information and skills with their fellow professional colleagues, seek more knowledge on their own initiative and above all, be willing to experiment and not be afraid of failure". Simply put, teachers must have flexibility built into their total professional and academic make-up and should be helped through regular in-service training to keep abreast of new techniques, skills and research in their field.

Effective teaching is a prerequisite for a reliant education which leads to a good level of confidence to both the teacher and his students as a result of which learning is coordinated effectively and professionally (ibid:P1). For effective teaching to take place, teachers need essential tools to work with. Learning may be greatly enhanced by the utilization of the many resources available in the school and through various school bodies. Nevertheless, teacher's planning of effective learning activities will be easier, less time consuming and often vastly expanded in potential scope when they know precisely what type of ICT materials are available to them and when to draw upon them regularly to affect their teaching ability. (Brown, Lewis and Harclerod, 1989. P.47). ICT utilization for instructional delivery or selection of ICT materials for instructional purposes is strongly depended on the type of learning strategy the teacher intends to adopt (Ukadike, 2004:32).

Teaching strategies are very important in the impartation of knowledge; and the type adopted determines, to a large extent, what the student would assimilate. If the appropriate method is adopted, knowledge could be accelerated (Shema, 2006). The best way to enhance good instruction is to adopt good teaching strategies which are keys or processes towards understanding the skills of teaching and learning, helping the teacher himself to grow and develop professional abilities to motivate children to learn and acquire the right type of understanding, concepts, values and attitudes needed to brace up to future educational challenges (Ifeayin, 2009). Since the teacher is trained in the art of teaching because of the child, the principles and methods of teaching should be guided by the experience of the child, the environment, and by the innovative approach to learning. The obsolescence of the old, outmoded curriculum content in relation to the advancing state of knowledge and the realistic learning needs of students, linked to the shortage of infrastructure, equipment and teaching materials and large class size, provide a strong ground for the adoption of innovative instructional strategies. In fact, the various educational goals (or curriculum objectives) have resulted in the adoption of various strategies to disseminate knowledge in classroom settings.

- In this paper, innovative instructional strategies are conceived as teaching methods or systems that have been redesigned in line with the current need for ICT utilization. Although various attempts have been made to increase access to modern technologies and services, only few educational institutions in Nigeria

have the technical and financial resources needed to use new technologies for educational purposes. The low level of development of the infrastructure needed to make effective and wide use of technologies is also quite discouraging.

The ICT infrastructure in the country is mostly limited to the cities, and therefore, out of reach of majority of students in schools in rural areas and other dispersed geographical locations. This therefore, shows that the current utilization of ICT facilities for instruction is minimal, limited and constrained in many ways (Govinda, 2009, P.2). The result is continuous adoption of teaching methods that are vague and less effective in achieving the goals of teaching and learning.

Conceptual Issues

Olakunle (2008) described innovative instructional strategies as strategies that are rooted in the search for viable and result-oriented procedures of enhancing instructional delivery in the classroom environment. The innovations are mostly anchored on psychological principles, management principles, and identification of resources and procedures which include media services, methodology, teacher's preparation, and continuing evaluation. (Obianwu and Asubiike, 1994).

The instructional strategies signify the analytical procedures for organizing and managing instruction, particularly in the classroom. The emphasis has always been on how they can be effectively used. In fact, they emphasized a great deal on individualization of instruction, games, micro-teaching, simulation, large and small group modes of instruction, etc. Kingston (1999) argued that any new teaching technique that fails to apply scientific knowledge about learning and the conditions of learning to improve the effectiveness and efficiency of teachers and training will become dysfunctional in its perceived operationalisation. But Ifeanyi (2009) states that new teaching systems must aim at effectively and efficiently achieving the required outcome based on logical process similar to scientific methods. Akingbade (2008) observed that the pedagogical model of instruction is bereft of new ICT utilization. It is mostly hinged on the assumption that teachers are all-knowing, and therefore, must play an active role in the instructional process. Yet, most students have been highly proficient in critical areas of their studies than their teachers due to self-intellectual training. Since a greater emphasis is currently placed on androgogical model of instruction which places high premium on self training, the use of computer-assisted instruction is more advocated (Benjamin, 2006). Innovative strategies not only facilitate effective teaching and learning, but make knowledge more meaningful, permanent and insightful; breach dichotomy in the intellectual capabilities of students; consider the developmental levels of the children; make learning tasks less cumbersome; give significant direction to the flow of knowledge and facts; provide concrete examples; provide intermittent reinforcement, interval reinforcement, and self-report measures.

The intrinsic value of the innovative strategies is also captured in the opinion of Ukadike (2000): "...the new methods of instruction reinforce knowledge, and provide basis for self-evaluation and performance in a given assignment. The view of Ndubisi (2004) is also imperative: "...They enable students to achieve what they intend to achieve through self-training; to achieve a sense of satisfaction and self-appraisal; to do things better, and consequently improve upon their levels, and develop the zeal to further go higher in their educational pursuits. In this sense, the strategies will serve as a tool for students to achieve a high level of educational freedom that is intrinsically valuable, and being a key to greater educational development.

The strategies which are, in the main, ICT-based, have been successfully adopted by the National Open University of Nigeria.

Problems of Teaching and Learning

Amidst the myriad of problems associated with teaching and learning in Nigeria is that no efficient system of teacher education operating a curriculum that has meaning or relevance for the goals of teaching has so far been developed and presented in a form that could help develop skills such as ability to see patterns and processes, ability to collect data, ability to develop hypotheses from available information or observation, ability to learn better and faster, and ability to apply gained or acquired knowledge to resolve some of the problems of daily living. Lawal (2007) also observed that students are mostly over-directed by the lectures teachers dish out which results in lack of proper imagination and initiative on the part of most of the teachers; and this is because students depend on the teacher's notes, handouts, and examinations. And in the course of their training, teachers' directions hardly allow independent opinion.

Other immediate problems are ill-qualification of teachers, most of who lack relevant skills needed to impart knowledge. This is compounded by lack of necessary instructional materials needed to enhance teaching and learning. In fact, teachers' effectiveness in their teaching has been greatly hampered by non-utilization of ICT facilities for effective instructional delivery (Raymond, 2008). Viewed along this line is

the problem of lack of refresher course for teachers at all levels. The main aim of this course which should be termed general course, is to equip teachers with the skills to use the ICT facilities, to demonstrate new roles of teachers, to enable them organize the classroom and effectively control it, and enable them to be able to observe their use, and perhaps construct teaching aids Olakunle, 2008). Alabi (1998) argued that the difficulty in relating the curriculum to the needs of the students and his environment is one of the agonizing problems affecting teaching and learning in Nigeria. Fafunwa (1974) described the good curriculum as "the total environment in which education takes place – the child, the teacher, the subject, the teaching methods, the physical and psychological environment. Curriculum development, which is the key to all education, must therefore, be flexible enough to cope with the changing needs of the people and the country. The development must be a continuous process in that it should be related to national needs and the personal development of individual.

Other problems include lack of readiness to beam by pupils/students; lack of effective motivation – both intrinsic and extrinsic; lack of interest and concentration; lack of mental abilities; lack of organization and preservation of learning materials; lack of goals and purposes; lack of learning activities; lack of proper guidance; lack of reward and punishment; lack of attention and enthusiasm; lack of emotional and social climate for learning.

Teaching Methods

The adoption of various methods of learning or disseminating knowledge, particularly in the classroom has been necessitated by the need to realize various educational goals or curriculum objectives. Therefore, a variety of teaching and learning methods have been presented by different scholars. Some of the methods include, lecture method, discussion method, demonstration method, discovery method, assignment method, field trips method, individualized instructional method, laboratory method, inductive and deductive method, open education method, and so on.

In the paper, four of the methods will be reviewed. They are discovery method, individualized instructional method, open education method and field trips method.

Discovery Method

This method emphasizes a great deal on the self as a veritable force in learning. It is a teaching strategy which enables the students to find the answers themselves (Abdullahi, 1982). It is anchored on the assumption that the individual has the capacity and knowledge to find out the panacea to a clearly spelt out problem. There are two types of discovery method – guided discovery method and unguided discovery method. In the guided discovery method, the teacher directs the students on what to do or to discover for themselves solutions to a give problem by providing them with general principles, but not the solution to the scientific problem. (Shipley,1972). The unguided method places emphasizes on the students discovering the solutions to a given problem by themselves – the solutions may be the general principles to a scientific problem.

The method has the following advantages

- i. Students are more active in the learning process;
- ii. It makes learning or what is discovered permanently glued in the memories of the students;
- iii. It provides student with intrinsic motivation since he derives pleasure and happiness in discovering things by himself;
- iv. It enables the students to fully grasp the theory or nature of scientific facts. They easily come to grapple with the fact that answers to questions can be obtained through investigations;
- v. It enables students to develop manipulative skills and attitudes necessary for effective science teaching;
- vi. It encourages analytical, synthetic thought and intuitive thinking among students since discovery is believed to operate at the highest levels of cognitive domain; and
- vii. They can easily apply the knowledge in independent discovery to new areas of problem-solving.

The disadvantages

The disadvantages include the following:

- i. It is stressful and time-consuming;
- ii. Students can discover what they may not necessarily expect for a particular study, thereby discouraging them to further brace up to the task;

- iii. The method is expensive and requires, sometimes, equipment or facilities that are not only costly but difficult to come by, and
- iv. The method is not appropriate for a large class size

Individual Instructional Method

This is also rooted in the consideration of the self as a significant factor in learning. "It is a programmed instruction in which the learning programmes are presented in carefully structured steps and the steps depend on the individual student and the nature of materials to be learned. Here, the pace of learning depends on the individual students (Abdullahi, 1992).

The advantages of the method include:

- i. Giving students the opportunity of assessing themselves intellectually and going on their respective pace;
- ii. It gives the students the freedom to exploit new opportunities, and to fully participate in the task presented before them;
- iii. It gives the teacher the opportunity of assessing the knowledge and performance of individual students;
- iv. It removes from the students tension and anxiety often orchestrated by conventional exam processes; and
- v. Since students go at their own pace, those who are still lagging behind in some lessons, can easily catch up.

The disadvantages include:

- i. It is basically time-consuming as students are giving the freedom to go at their own pace;
- ii. It requires a lot of equipment and materials for instruction. In the main, it is ICT-based; and
- iii. It does not give room for students' interaction as such.

Open-Education Method

This is a method or system of education that makes access to education more flexible to learners. According to Aderinoye (2001), it remains a primary mechanism for the information – driven age, a tool that bridges the gap between the different types of learners. It is an avenue for developing intellectuals at all levels of their educational journey and facilitates pedagogy for enhancing learning of both learners and teachers".

The open education method also allows learners to go on their own pace; and in an environment convenient for them. It requires the use of specially prepared self-learning materials and media – either audios or audio visual – such as radio, television, computers, etc. This method of learning or system of education is adopted by the National Open University of Nigeria.

In this method, the learners determine where to learn and when to learn. The advantages include:

- i. The lectures are all well-packed and tailored to the needs of the individual students;
- ii. Less time is wasted;
- iii. It makes education accessible to all;
- iv. As an individualized instruction, it allows learner to go at their own pace; and
- v. Less pressure is exerted on school facilities.

Yet, the method or system has the following disadvantages:

- i. Students are not given opportunity of group study;
- ii. Learners are difficult to evaluate as some of them could be assisted at home; and
- iii. In a society where ICT facilities are not available, the system may be difficult to adopt.

Field Trip Method

This method is mostly group-based. It involves learners going on excursion outside the classroom for the purpose of getting first hand information on what is to be learned; and make relevant observation. The method has been very effective in teaching sciences and some art subjects (Adeyemo, 1955).

The advantages of the Field Trip Method include:

- i. Students are more involved in learning activities as they observe what is to be studied;
- ii. Since students are mainly to observe a given phenomenon or objects, their senses are better developed and sharpened;
- iii. It makes students to have first hand information on things that cannot be physically presented in the classroom;

- iv. Students are easily motivated to read wide on what they have observed, and “harmonise actual field experiences with information gathered from text books;
- v. It sharpens the students’ abilities to objectively assess what they are able to observe;
- vi. It sharpens their world of reality; and
- vii. It is also anchored by the imperative of the self in the whole process of teaching and learning.

The following disadvantages are noted:

- i. The arrangement for field trip is time-consuming and expensive;
- ii. The teacher may not be able to effectively supervise the students particularly if they are in groups and are moving round; and
- iii. There is a likelihood of lack of comprehension of what is being observed, consequently making the trip dysfunctional in achieving the goal of learning.

Redefining the Perspectives of the four Methods using Advanced Technology

The deployment of new ICT has been considered as very vital to the task of providing solutions to the problems of education (Ukadike, 2000). Institutions of higher learning must be seen to adopt new approaches for packaging information, and for course delivery. *Consolidated Declarations and Plans of Action of the Regional Conferences on Higher Education held in Tokyo and Dakar (1997-98)*. The UNESCO Regional Conference clearly emphasised that teachers, professors and technical and administrative staff must be given training that enables them to integrate new ICTs into their teaching programmes and to examine the multiplier effects with regard to their use. (Govinda, 2009).

Access to these ICTs and services have been limited due to the fact that some of our institutions have no technical and financial resources to procure them for educational purposes. (Ukadike, 2000). Yet, most of them have become familiar with these facilities and have introduced them. They include media, such as modern overhead projectors, opaque projectors slide projectors, filmstrip projectors, 16mm projectors, Educational Radio, Instructional Television, Computers and the Internet. These media widen and extend the horizon of both the learners and the teachers alike. They enable the focusing of attention on important and interesting aspect of study. They create a high sense of self-awareness and self-correction through the micro-teaching techniques. They, in fact, provide learner with variety and sources of information. All motivational techniques in learning psychology are appropriately brought into sharp focus by means of these medial or ICT facilities. And for the resourceful teacher, the scope is generally limitless when he is equipped with these media. The daily frustrations encountered in the classroom by the teacher are easily overcome by means of the use of the appropriate technology both for storage and retrieval of any instructional information. The computer for example, is very effective for instruction, storage, retrieval, performance analysis, documentation, dramatization and demonstration.

On a more pertinent note, all the strategies, particularly the four explained in these paper-discovery method, individualized instructional method, open-education method and field trip method can all be effectively facilitated by skillful use of the media on ICT facilities. Even those learning strategies built on factual information, visual identification, concept of learning, problem-solving, attitude formation and development, and so on, can also be effectively adopted by uninhibited use of the ICT or media facilities. Technology is still a major and long lasting contributor to the dramatic transformation of the global educational system. Satellites and internets have made learning more real, accessible and interesting. The computers and networking technologies, have, by creating conditions for rapid connections, opened up possibilities for many different educational and learning opportunities. From radio and satellites to computers at the desktop and palmtop, various communications channels have been used to deliver education and training both on campus and off campus. And today, Internet connections are, for example, possible over any kind of network: dial up telephone, private digital and analog networks, satellites, radio, cellular, public switched telephone networks, Asynchronous Transfer Mode (ATM), and so on. There are a lot of, or variety of computer-assisted instructions/program which could assist, to a large extent in enriching the scope of these four selected methods. These instructions/program are: Computer Assisted Instruction (CAI), Personalised System of Instruction (PSI), Individualised Prescribed Instruction (IPI), Programmed Instruction (PI), Audio-Tutorial System (AIS), and Instructional Simulation Games (ISG).

Computer-Assisted Instruction

This is simply the direct use of the computers by the student for instructional purposes. The computer then serves as a medium of instruction. A form of dialogue or discourse between the student and the computer is observed. This instruction on programme can effectively facilitate the application of the discovery method.

open education system, individualized instructional method and discovery method. They are all rooted in the tasks of promoting self-learning, and self-assertiveness.

Personalised System of Instruction

The package is also centred on the learner. It focuses on the interest and characteristics of the learning. The learner goes purely on self-independent study, though he is provided with necessary data required to do that. The tutorial materials are also provided for students' use. This package can enhance the adoption of open education method and individualized instructional method.

Programmed Instruction

It is a learning or instructional technique that involves the structuring of learning tasks in accordance with its difficulty level. It is then presented in series of steps with each step having a feedback. It is also structured in such a way that each step of information moves from simple to difficulty levels. The computers and programmed text books can be used to present programmed instruction to the learner or student (Obianwu and Asubiuke, 1994). The technique can easily give strength to the adoption of individualized learning method and open education method.

Audio-Tutorial System

The system is purely based on the use of audio package such as radio and audio tapes. It is good for individualized study and the information may also be presented in a programme form. The package is good for discussion method, individualized instruction method and open education method.

Instructional Simulation Games

It is good for teaching various subjects, and to enrich classroom activities. It is best for discussion method, and field trip method.

Instructional System: Perspectives of Innovation

Many methods of instruction have been tailored to the needs of the learners (students). Yet, effective learning is still difficult to achieve. The adoption of the media or ICT packages have aided, or enriched the various methods or techniques of teaching and learning. But it is still important to, within the context of this innovations in ICT utilization, consider systems approach to instruction, as the tools on their own cannot provide the desired result or goal of learning.

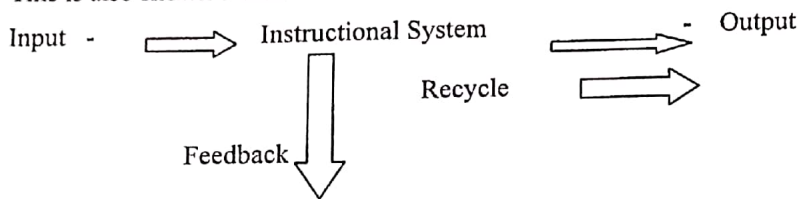
Instructional System is a broad-based system of combining various elements involved in the teaching and learning process, to bring about effective instruction. According to Brown, (2002), it is an operational plan... aimed at achieving specific learning outcomes. It is simply borne out of the application of technology in solving problems in education, particularly in the area of designing and managing instruction in a systematic manner. It combines both learners, teachers, education, content, method, materials, personnel, facilities, media equipment, and other related elements, and coordinate them to serve as instructional activities. According to Ogunranti et al (1982), it is an approach that ensures a much more comprehensive consideration of most of the factors in an instructional situation. It ensures constant monitoring of the teaching-learning process so that any defective part of the system that might affect other parts are promptly detected and corrected. It is also learner-centred and emphasizes a great deal on the media or ICT packages to achieve stated objectives.

Obianwu and Azubiuke (1994) presented a simple illustration of instructional system:

<p>Input Learners, previous knowledge of the topic of study, abilities and experience</p>	<p>Instructional System (All the elements)</p>	<p>Output (Skills acquired by the learners)</p>
------------------------------------------------------------------------------------------------------	-----------------------------------------------------------	------------------------------------------------------------

The expectation here is that the learner will, by the exposure to the programmed elements in the instructional systems, (particularly the media), perform excellently well. But if the output was not impressive or satisfactory, after the exposure, the programme will be revised or the learners recycled and made to repeat the programme.

This is also shown below:



This feedback is a veritable means of adjusting or modifying the system since it provides necessary information on the performance of the system. The teacher uses the feedback to either modify the system or not.

This strategy or system is considered as the most logical, result-oriented and broad-based approach to teaching and learning. Yet its effectiveness is still anchored on the myriad of technological facilities that have been modelled and remodelled to educational purposes and specifically enhance teaching and learning. Therefore, the task before the teacher is to apply the media instrument.

Teacher Role and Competence in ICT Utilization

As I have stated in this paper, learning is greatly enhanced by the use of resources available in schools. But when teachers know the types of ICT materials to use, planning for effective learning activities will be made less tasking, and the activities will be expanded in scope. They should therefore be thoroughly acquainted with the resources and understand their essential functions, and basis for their selection. They must explore the landscape of learning; show commitment to academic knowledge and to learner – centred practice. In fact, competence development, particularly in ICT usage is very paramount. They must also develop the capacity to assist students in the development of criteria to select and evaluate teaching methods and ICT materials. In fact, they must have levels of expertise beyond a simple ability to use current technology, and what is needed in technological competence. (Armstrong and Savage, 1994). They must have a sophisticated cognizance of technologies that include ability to see novel applications and to expand the nature of the technologies usage themselves in school. (Dickman, Van Sickle and Bogan, 1986). The emphasis in today's education is that attention is given to realistic, lifelike learning situations which goes beyond mere teachers' explanations or explanations in books. This realism can be developed through classroom construction activities which challenge students to solve instructional problems on many fields of study by transforming simple, inexpensive instructional materials into forms which help them and other people to learn. (Brown, Lewis and Harceleroad, 1959)

The features of ICT must, as it were, be seen as potentials that have to be implemented in the contexts of learning. Cuban (1986) and Cohen (1987) claim that the use of ICT has to fit into the teachers' pedagogical view of teaching and learning..."

Conclusion/Recommendations

It is quite obvious that teaching methods or techniques that are not redefined or redesigned within the perspective of the innovations in ICT, may remain dysfunctional in terms of their perceived operationalisation and concretisation. In other words, when the strategies are adopted in isolation of the media packages, now ICT based, they may not achieve the desired results. In this paper, innovation is conceived in terms of media or ICT application in instruction. Therefore, it is more critical in the quest for effective teaching and learning. Four teaching methods were reviewed, and the perspectives for their effective adoption (using media or ICT facilities) were crafted. The instructional system as another model of instructional innovation was also presented. It is broad-based, and also recognizes the relevance of the media or ICT facilities in its application.

The significance of the teachers' performance and competence in the use of ICT facilities was also advanced. When the teaching techniques begin to map well on the pedagogical realities of the classroom, and fundamentally based on educational technology principles, the goals of teaching and learning would be achieved.

Teachers must be well trained on the use of, or application of ICT facilities in schools; they must develop the spirit of enquiry, creativity and professionalism.

References

Abdullahi, A. (1982),. *Science Teaching in Nigeria*. Ilorin: Atoto Press Ltd.

- Adeyemi, P.O. (1985). *Principle of Education and Practice of Education*. Ado-Ekiti: Omolayo Standard Press and Bookshops (Nig) Ltd.
- Armstrong D.G. and Savage, T.V. ((1994). *Secondary Education*. New York: Macmillian College Publishing Company.
- Akngbade, O.M. (2008). The Problems of Teaching and Learning in Nigerian Schools. *Daily Trust*. April. P.37.
- Benjamin, M.O. (2006). *Fundamentals of Educational Technology*. Ikeja: Olaolu Publishing Company Ltd.
- Brown, J.W., Lewis, R.B. and Harcleroad, F.F. (1989). *A-V Instruction Materials and Methods*. New York: McGraw Hill Book Company
- Brown, J. (2002). Individual and Technological Factors Affecting Perceived Ease of use of Web- based Learning Technologies in a Developing Country. *Electronic Journal of Information Systems in Developing Countries*, 9(5), 1-15
- Cuban, L. (1986). *Teachers and Machines: The Classroom Use of Technology since 1920*. New York: Teachers College Press.
- Cohen, D.K. (1987). Educational Technology, Policy and Practice. *Educational Evaluation and Policy Analysis*, 9(2), 153-170.
- Dickman, L.A, Van, S and Dogan, J. (1986). A New Technology in Teaching and Learning *Computer and Education*. 8(2) 203-224.
- Fafunwa, A.B. (1974). *History of Education in Nigeria*. London: George Allen and UNWIN Ltd.
- Govinda, S. (2009). Utilization of Information and Communications Technology for Education in Africa. *Journal of Information and Knowledge Management*, 2(4), 290-299.
- Ifeanyi, P.A. (2009). Systems Approach to Instruction in Classroom Setting: an Examination of the Suspect on Students of Selected Secondary Schools in Lagos State.
A M.Sc Thesis, Faculty of Education, University of Ibadan.
- Kingston, H.A. (1929). *Instructional Systems and Methods*. New York: McGraw Hill Inc.
- Lawal, H.S. (2007). Teacher Education and Professional Growth of the 21st Century Nigeria Teacher, A paper presented at an annual national conference of Nigerian Teachers' Institute. (NTI), Kaduna. Oct.28.
- Ndubisi, M. (2004). A Critical Evaluatio of the Strength of new strategies for Instructional Delivery in African Schools. Unpublished doctorate dissertation, University of Port-Harcourt.
- Obianwu, E.A. and Azubuile, N. (91994). *Educational Technology Media*. Abba: Nuel Centi (Nig). Publishers.
- Ogunranti, S.A, Ihongbe, J.U., Babatunde, S.O., Akanbi, K. Chukwuma, J. (1982). *Educational Technology: Associateship Certificate in Education Series*. Ibadan: Heinemann Educational Books Limited.
- Olakunle, S.B. (2008). *Principles and Practice of Education*. Ibadan: Golden Millennium Books Ltd.
- Raymond:, J.B. (2008). The Falling Standard of Education in Nigeria. *Newsline*. May 12 P.9.

Shema, J.I. (2206) *Innovations in Teaching Methods*. New Jersey: Prentice Hall.

Shirpley, Y.T. (1972). *The Systematic Design of Instruction*. London: John Hopkins University Press.

Ukadike, S. P. (2000). The Effect of Visual Aid and Tactile Stimuli on the Teaching and Learning of English in Selected Secondary Schools in Bosso Local Government Area of Niger State. M. Tech (Educational Technology) Thesis. Department of Science Education, Federal University of Technology, Minna.

Ukadike S.P. (2004). The Value of Information Communication Technology (ICT) in Education. *Newsline Newspaper*. September 12. P.12