



Volume: 2, Issue: 9, 123-127
Sep 2015
www.allsubjectjournal.com
e-ISSN: 2349-4182
p-ISSN: 2349-5979
Impact Factor: 4.342

Bright Chima Megbo
Academic Planning Unit,
Federal University Wukari,
Nigeria

Abdulganiyu Saka
Academic Planning Unit,
Federal University Wukari,
Nigeria

Evaluation of Modern Development in Teaching and Learning Process through Instructional Materials Utilization

Bright Chima Megbo, Abdulganiyu Saka

Abstract

The era of viewing teaching as anybody's job seems to have expired, as the scientific nature of this noble profession is fast becoming more apparent. It is expected of the teacher to be adequately equipped with good mastery of the subject matter, effective selection of teaching methods, which incorporates the use of instructional materials. Based on the above statement, there is a critical need for the evaluation of Modern Development in the Teaching and Learning Process through instructional materials utilization. The paper delves extensively into the area of instructional materials and focuses on different topical issues such as conceptual framework, importance of instructional materials utilization, instructional materials and academic attainment, types of instructional materials, factor affecting improvisation of instructional materials among others are deeply explored. Also, series of suggestions and possible solutions towards the realization of the needs, interest and aspiration of teaching as a profession was examined.

Keywords: Educational technology, methodology, instructional materials, instruction, students, teaching, resources, improvisation.

1. Introduction

The ultimate goal of instructional materials is to facilitate effective teaching, improvement of students' knowledge, abilities and skills to monitor their level of assimilation of information, and to contribute to the student overall development and upbringing. The importance of instructional materials in teaching-learning environment cannot be over emphasized. The fact is that, such materials would facilitate and make learning easy and lively.

The essence of instructional materials in teaching and learning is to make the teacher's effort of imparting knowledge easier. The learner is also aided to grasp the knowledge easily, with a view of promoting effective teaching and learning. Instructional media or technologies were introduced to Nigeria Education system with the aims of enhancing effective teaching in our nation schools. Therefore, the teacher needs to select or improvise suitable instructional materials or aids in order to facilitate effective teaching and learning and motivate the learners.

A Nigerian Newspaper called Punch, on the 8th June, 2015, reported that Nigeria presently ranks among the countries with the highest number of out-of-school children in the world; the "Education for All 2000-2005; achievements and challenges" documentation from the 2015 Global Monitoring Report revealed this and concluded that Nigeria education system is among the worst education system in the world. To correct this, some parts of the country need an additional 220,000 Primary School teachers. This is one of the ways the country can work towards meeting the Education for All goals.

However, as it may be difficult to suddenly push 220,000 new Primary School teachers into the vacant positions, the interim solution lies in the huge resources that technology can provide. Therefore, it is high time the Nigerian Educational System started putting technology to the task. While the government continues to work on a suitable strategy on how to solve this problem, there must be a measure put in place to curb this problem in order not to deny children of schooling age access to learning.

2. Instructional Materials

Instructional materials as suggested by schools are materials of visual and audio-visual categorically which are aimed at helping learners to understand the concepts, abstract and concrete ideas in the teaching and learning environment.

According to Lumsdaine, (1964) instruction is any specific events aimed at producing the required modification of behavior through learning. In the opinion of Brunner (1966), instruction consists of leading the learner through a sequence of statements and restatements of a

Correspondence
Bright Chima Megbo
Director of Academic
Planning, Federal University
Wukari, Nigeria

problem so as to help the learners increase the ability of grasp quickly. The learner should be able to transform and transfer what he/she has been taught. Instruction aids adaptation to changes in behavior through experience. It consists of conditioning training, and acquiring of motor skills, affective and cognitive learning, and the latter process of mentally retaining complete experience through structural patterns or concept.

According to Olawale (2013), instructional materials are used to facilitate teaching and learning process for better result. Uzueghu *et al.* (2013) explained that instructional materials are used to assist the instructor in the preparation of a lesson, teaching of the lesson and in facilitating students learning of the subject matters. Instructional materials include those objects that are commercially acquire or improvised by the teacher to make conceptual abstraction more concrete and practical to the learners. They are also used by the teacher during instructional proceeds for the purpose of making the content of instructions more relevant.

Further, instructional materials can be described as concrete or physical object which provide sound, visual or both to the sense organs during teaching (Agina-Obu, 2005) [3]. The instructional materials could be regarded as the information dissemination gadget/device utilized in the classroom for easy transfer of learning. They help to provide first-hand experience where necessary. However, it is not just the use of tools of technology alone but a systematic and integrated organization of machines, hardware and software, and the teacher to find lasting solution to teaching and learning problem through a logical process and procedure. It is very essential for a teacher to be thoroughly acquainted with the teaching resources and service available to him. The components of instructional materials available to teachers and students are in large numbers and even vary according to the function of each of them. For instance, picture (motion and still) graphics, maps, radio-recording playback and some of the equipment used are regarded as components of audio-visual aids or instructional aids. Further examples of instructional materials include: charts, maps, diagram, models, globe film strips, television, radio cassette, video recorder, public address system, card boards, calendars and computer.

2.1 Classification of Instructional Materials

Instructional materials are used to enhance the effectiveness of teaching and learning. The primary aims of instructional materials are to aid both the teacher and the learners in making the process of imparting knowledge to the learner successful. Instructional materials are non-human resources which can be categorize into print media, non-print media, and manipulative materials. The examples of print media are; textbooks, work manual, pamphlets, journal, newspaper, magazine, brochures, catalogues, photography and picture etc. On the other hand, non-print media consist of visual aids such as television, tape recorder, video and computer. Other instructional materials are manipulative. These include: modules, games, simulation, puppet maps, boards cardboard, flash card, chart, etc. The above mentioned are the materials which can facilitate teaching and help students to learn easily, both in the classroom and outside the classroom.

Instructional materials are in various classes, such as audio or aural visual or audio-visual. Audio instructional materials refer to those devices that make use of the sense of hearing only, like radio, audio tape recording, and television. Visual materials, on the other hand, are those devices that appeal to the sense of both hearing and seeing, such as television,

motion picture and computer. Among the instructional materials the teacher uses, the visuals are more frequently used than the combination of the audio and audio visual

Audio: these include materials like Radio, Record Players Cassette, gramophone etc. These aid teaching through the sense of hearing, they are mostly used in teaching of music and songs.

Visual: The category of this aids consist of film strips, maps, specimen, pictures, charts, blackboard poster etc. Until facts are presented in form of visual aids, some students may not readily get the meaning of idea clearly, concepts and facts.

Audio-Visual Materials: These categories of aids consist of a combination of both audio and visual materials. They include things like television films and projector etc.

It is worthwhile to emphasise that teachers should select the instructional materials only after taking due consideration of certain criteria:

Reliability: As a matter of fact, the teacher should make sure the instructional materials he/she is going to select could be used to achieve the objectives of teaching the subject matter of that particular lesson. For instance, it would not be appropriate for a teacher teaching English to come into a classroom with the apparatus required for teaching mathematics.

Relevance: The teacher must in selection of instructional materials ensure that only instructional materials that relate to the topic are used during the teaching and learning process.

Cost: The instructional materials should be within the reach of teacher; the cost of instructional materials could determine whether the institution could afford buying them.

Availability: The teacher should consider the availability of the instructional materials to be used before the date of the lesson; the materials should be accessible to the teacher for pre-testing, if necessary.

Simplicity: The instructional materials to be used should be simple to operate or manipulate.

Qualitative: The instructional materials selected for the teaching, by the teacher, should be of a good quality to enable him achieve the desired goals of the teaching.

Currency of Materials: The instructional materials should be the best or close to the best in quality and should not be outdated.

2.2 Importance of Instructional Materials and Utilization

Some educationists agree that instructional materials bring about improvement in teaching and learning process, as well as enhance smooth communication between the teacher and learners and enable them control their environment. According to Orebanjo (1989) our student may not be able to cope with the problems of the present and future scientific and technological advancement, unless the teachers provide them the opportunity that would enable them practise on their own; this will aid their self-discovery by doing. Akanbi (1999) asserted that instructional materials are an essential tool for enriching, visualizing amplifying, transmitting and accelerating teaching and learning process. Some authors are

of the opinion that instructional materials for teaching and learning are very essential since they are aimed at facilitating effective learning. While Agbulu and Wever (2011) opined that instructional materials are vital instrument for teaching because their purpose is to transfer information from one individual to another and help the teacher in extending his students' experience. Instructional materials stimulate learners' interest and help both the teacher and students overcome physical and some other limitations during the presentation of subject matters.

The use of instructional materials would increase the ability of students to learn more, retain and bring about the skills they are expecting from them (Adewoyin and Olawale, 2013). Effective teaching cannot be fully accomplished without the use of instructional materials, because instructional materials promote closer and effective communication between the teacher and the learners. Instructional materials would enhance the teachers' knowledge and aid him overcome some physical difficulties that may hinder his effective presentation of a given topic, and improve the efficiency and effectiveness of teaching and learning process.

2.3 Instructional Materials and Students' Academic Attainment

The major purpose of instructional materials is to facilitate and support teaching and learning process. Instructional materials must be tried out, tested and revised to ascertain its effectiveness and its quality. However, there are several studies on instructional materials and academic attainment. Isola (2010) conducted a research on the effects of instructional materials and students performance in the West Africa School Certificate Examination (WASCE) in Kwara State. He correlated material resources with academic achievement of students in ten subjects; the data were collected from the subject teachers in relation to the resources employed in the teaching. When achievement of Students' WASCE for the past five years were related to the available resources for the teaching of each subject, he concluded that material resources have one important effect on student achievement in each of the subjects.

Osuolale and Olaleye (1992) opined that instructional materials play a vital role in academic attainment of student. They conducted a research on the relationship of materials for the teaching of selected subjects with student achievement in ten secondary schools. Their findings showed a positive correlation between the quality of instructional materials and academic attainment of students in these subjects.

In the view of Ogunleye (2002), science studies the dynamics of human activities concerned with understanding the working of our world. This understanding has helped man to know more about the universe. The knowledge of science enables us to know more about the other planets of the universe. The field of science comprises the natural disciplines like Mathematics, Physics, Chemistry and Biology.

According to (Esiobu, 2005), Physics remains one of the most difficult subjects in the school curriculum. According to the Nigeria Education Research Development Council (NERDC), the investigation showed that most of the students' performance in ordinary level was very poor (Akanbi 1983; Omosowe 1999). In this vain, poor academic achievement in physics could be related to many factors. Teachers' competencies and teaching strategies employed by Physics teachers are considered the major drawbacks. Lack of quality instructional materials for science teaching has been another major contributor of poor academic attainment of student in

all the science subjects in Nigeria, physics being inclusive. From the above points, it is necessary to appreciate the fact that no matter how well the teachers are trained, most secondary schools lack the necessary and adequate laboratory equipment and materials for the teachers to translate their competencies into reality.

2.4 Types of Instructional Materials

Instructional materials assist the teacher to clarify important concepts and to sustain learners' interests in lessons. Students are afforded the classroom opportunity to share experiences necessary for new learning. There different types of instructional materials employed in the teaching and learning process. They are as follow;

1. Sound and Visual Resources: e.g television, video, camcorder, still video camera, compact disc, camera and fax machine.
2. Pictures and Pictorial Representative: e.g photographs, drawing, slides, transparencies, still picture, postcard, study prints, album, scrap book, story board etc.
3. Symbolic and Graphic representatives: e.g maps, charts, chalk board, globes, atlases, poster, cartoons, diagrams, bulletin board, flannel board and time line etc.
4. Computer Resources: e.g hardware, printer, graphics tablet, voice synthesizer, software, modem, track ball, mouse, joystick and touch window, etc.
5. Projectors, Viewers Players Recorder: e.g slide, tape, LCD projector, film strips, opaque, overhead, video, etc.
6. Resources for Production of Media: e.g lettering devices, map outlines, slide making, picture mounting, duplicating, photocopying, etc.

3. Instructional Materials for Increasing Teachers' Efficiency

Teachers must have a clear sense of direction both in their teaching philosophy and daily teaching. Instructional materials are derived from various sources. The professional teacher needs to note that every instructional material has its unique function in teaching and learning situation. Therefore, better teaching and faster learning principles can be facilitated by carefully selecting the teaching aids, development and skillful utilization of instructional materials by the competent teacher. Based on the forgoing, the teacher can be more effective through the utilization of instructional material in many ways.

Instructional materials would help the teacher develop a positive attitude towards the teaching and learning process. The instructional objectives, content, learning activities, and evaluation instruments should be taken into consideration by the teacher in the selection. With the help of instructional materials, the teacher would be able to understand the concept of the subject clearly and have adequate understanding of the various teaching methods and their appropriate selection as occasion may demand. Instructional materials would adequately equip the teacher with the principle of development and how to use these principles for promoting effective learning among the students. Furthermore, quality teaching materials would enable him to understand students' ability vis-à-vis what they can do and what is not in their reach at various levels of development. This knowledge will enhance the teachers' competencies in evaluating the learning outcomes in other to discover area of strength and weakness on the part of both students and the teacher himself.

For making teaching and learning more effective, it is necessary that the teacher masters the pattern of growth and

development in students. The teacher should understand the characteristics of different age groups and levels, and know how to deal with their learning problems.

An effective and efficient teacher needs to understand some sensitive factors in the classroom. These factors include but not limited to:

- (i) **The Learning Task:** Teacher must realise that the choice of subject matter must be guided by its reliance to the learners' needs, as well as the degree of learner's readiness both in terms of age and experience.
- (ii) **The Teaching Strategies:** These include both the methods and the materials for teaching. Therefore, teachers have to be selective in choosing the most appropriate strategy for each particular situation.
- (iii) **The Learners:** The entire teaching and learning are centered on the students. The classroom experience can epitomize the manufacturing process in which the learners represent both the raw materials and finished products, and the learners that must pass through the mill to deserve to be given adequate attention and consideration.

4. Factors Affecting Improvisation of Instructional Materials

Improvisation is the ability to react spontaneously from moment to moment in addressing a specific situation; it is related to resourcefulness. The attitudes towards improvisation are knowledge, culture and environmental developments, and differ from person to person, in place and time. Improvisation is an integral skill and part of the teacher's work. Improvisation means to invent, compose or perform with little or no preparation and also to reform or make quickly from materials and source available without previous planning. It is intuition guiding action in a spontaneous way (Crossan and Sorrent, 1997), or making the most of what you have and getting the most out of what you make (Keefe, 2002). Improvisation is the ability to take existing pieces and put them together in a new combination for a purpose. The pieces could be bits of information about a problem or it can be parts of a melody. The teacher or students apply tools or methods to these pieces in a very flexible manner. As an example, the teacher tries to supplement, substitute or devise an inadequate material and equipment to facilitate effective teaching and learning of his students.

Balogun (2007) identified two main constraints militating against the successful improvisation in teaching and learning process. The constraints are namely human and technical factors. Omosewo (2008) considered the human factors as the teacher's professional commitment, creativity, mechanical skills, initiative and resourcefulness. The human factors relate to the teachers skills in developing the resources, while the resources provide appropriate learning experience to the learners. They found out that many of the teachers are aware of the possibility of improvisation but many of them exhibited poor attitude toward improvisation. Very few teachers are prepared to practise improvisation as majority of them depend on imported equipment and complain that improvisation is time-consuming and fund-depleting. On the other hand, the technical factors relate to the question of degree of accuracy and precision that is possible with the improvised equipment. Maduabunni (2003) is of the opinion that lack of adequate professional training is a major problem affecting the effective use of local resources for teaching. In the same vein, Isola (2010) advocates the need for a definite well-planned training

programme of improvisation for teachers to improve and up-to-date their competencies.

5. Obstacles Associated With the Use of Instructional Materials in Teaching-Learning

The rapid growth of technology offers a formidable challenge to the teacher. However, the use of practical instructional materials can simplify the learning process to a great extent. In order to ensure an effective teaching and learning process, it is important for the teacher to be thoroughly acquainted with the teaching resource and services available to him. To make the best use of instructional materials available with the modern innovation, many teachers experience lots of challenges related to using ICT-based teaching aids due to lack of skills.

From the above point, some educationist came up with the factors militating against the use of instructional materials (Aneale, 2000, 2004; Bello and Shuaibu, 2013; Medugu, 2009; Taale and Mustapha, 2014). Some of the revealing problems as highlighted by these researchers include:

1. Poor teachers' professional knowledge and technical know how to handle those materials mar the smooth use of them.
 2. Low teacher competence in the area of effective usage of instructional materials.
 3. Failure to appreciate the importance of using instructional materials in promoting and understanding of learning principles.
 4. Inadequate awareness of type of instructional materials to be used in teaching different concepts or contents
 5. Lack of opportunities for in-service training/refresher course for serving teachers to update their knowledge periodically in the light of new research findings.
- In the opinion of (Bada and Ajibade, 2007) ^[2] the problems associated with the utilization of instructional materials include:
- i. Inadequate provision of facilities like suitable laboratories, workshops and special subject room for practical-oriented subject such as Home Economics and Business studies.
 - ii. Inadequate provision of consumable items or fund to buy the materials for practical work; wood, sheet, metal, chemicals, glasswork clothing materials, etc.
 - iii. Poor knowledge of how to teach the subject matter (pedagogic knowledge).
 - iv. Poor development or total absence of library facilities and service in the school.
 - v. Pathetically low take home pay.

6. Conclusion

Any institution responsible for educating others typically adopts a standard curriculum that includes educational materials such as textbook or workbooks. These materials are supplemented by the educator to meet the needs of the learners. Instructional materials are chosen based on their alignment with the accepted curriculum and their effectiveness at increasing students' interests.

Instructional materials covering controversial issues should represent multiple viewpoints and be free of historical omission. Media should comply with all organisational standards in relation to age appropriateness. In addition, instructional materials should be accessible to the diverse student body in terms of learning styles and special needs. Laboratory equipment and similar learning materials should be developmentally appropriate for the learners' skills, and operate in safe working order. Students should be given clear and succinct instruction on how to use instructional materials

appropriately; for example, how to use graphing, calculator, to support their mathematics education.

7. References

1. Adebimpe, A.O. (1997). Improvisation of Science Teaching Resources, Proceedings of 4th Annual Conference of STAN, (PALS 97), Kano, Nigeria.
2. Ajibade, A. and Abass, B. T. (2007). Fundamental of Curriculum and Development, Evaluating Printing Ventures.
3. Agina-Obu, T.N. (2005). The Relevance of Instruction Materials in Teaching and Learning in Robert-Okah. And Uzoeshi, K.C. (ED) Theories and Practical of Teaching, Port Harcourt; Harey Publication.
4. Eniayewu, A. J (2005). Effective of Instructional Materials on Teaching and Learning of Economic in Secondary Schools - A journal of School of Education, College of Education Ikere-Ekiti, vol. No1.
5. Femi, A. and Fakayode, S.A. (2004), Child Developmental Psychology
6. F.M.Osalusi (2005), Teaching as a Career, Ado-Ekiti, Greenlone Publisher
7. M.B. Taiwo, (2003), An Introduction to History of Education
8. Mc. Farland, H.S.N, (1981), Psychology Theory and Educational Practice, London: Routledge and Kegan Paul
9. Okwelle, P. C. and Allagoa, F.O.N (2014). Enhancing Teacher Competence In the use of instructional materials, in Electronics Education in Senior Secondary Schools in Nigeria. Research on Humanities and Social Science, Vol.4 No. 28
10. Kingzarduff (2013). Science Education and Teacher Education Journal, University of Jos.
11. Oladejo, M.A., Ojebisi, A.O., and Isola, O.M. (2011), Instructional materials and Students Academic Achievement in Physics: Some Policy, Implication. European journal of Humanities and Social Sciences. Vol 2, No1.
12. Tyler, R. (1949). The Basic Principle of Curriculum and Instruction: Chicago, University of Chicago Press.
13. Adeniyi, A. A. (2015). Methodology and Instructional Materials, OP.CIT, P.91.
14. Punch News Paper, Monday 8th June 2015.