

Improving quality in Education: The relevance of selection and acquisition of instructional materials in teaching-learning process

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Abstract

Prior before now, teachers were perceived to have encyclopedic knowledge. That is, the teachers are assumed to know everything, and anything they don't know do not exit. Teachers' effectiveness at that period rested on his knowledge of the subject matter, the knowledge of how to organize and present content meaningfully, and his understanding of those being taught Okorie (1979). However, new technologies or innovations demand new pedagogy. Recent researches show that learners learn effectively with the use of instructional materials, especially that which arouse their senses. Consequently, at this time of knowledge explosion, and new methods of teaching that is learner-centered, as well as the influx of new media into the education sector, and subsequent government financial squeeze, there is need to properly select and acquire instructional materials that will meet the instructional objectives of today's learners. Also, in order to meet the varying needs of the learners and learning styles, teachers no longer solely rely on words to convey their meanings to learners. Thus, it becomes paramount to apply various instructional materials in our teaching/learning process in order to make meaning more vivid and interesting (Nacino-Brown, Oke and Brown, (1992). Hence, this paper addressed the need for quality education through effective selection and acquisition instructional media for the 21st Century learners. It identified various reasons advanced for inclusion of media in teaching/learning process, and a number of other factors considered before the selection and acquisition of a particular instructional media for instruction. As well, the types and classification of instructional were not overlooked, and standard criteria for selection of instructional media were tackled by the authors.

Keywords: Instructional materials, Quality Education, Educators, Selection criteria, Learners, Acquisition

The Concept of Selection

Generally, selection could be defined as the act, process or the action of meticulously choosing something amongst larger number of things (alternatives) as being considered as the best and suitable for a particular purpose. In educational arena, it is the process of carefully choosing instructional material(s) that best or most suitable for instructional objectives. It is the idea of making or taking decisions between two or more available instructional objectives. It presupposes that appropriate educational materials that are appropriate for a particular learning experience are selected amongst others. The materials to be selected must be relevant and appeal to the subject matter. It denotes that a variety of items are taken from a larger collection (Ogunmilade, 1984) ^[17]. Selection is the process of carefully selecting literary materials for building library collection based on appropriate selection policy.

Concept of Acquisition

In any educational institution, books and other literary materials need to be purchased for the services of academic faculty, students, administrators for the school or university community. Consequently, acquisition refers to the process of obtaining books and other documents for a library documentation centre or archive (Prytherch, 1990) ^[20]. The author asserts that some writers, particularly from the academic sector use the term 'acquisition' in a much broader sense, to cover the whole area of book provision. Spiller (1992) ^[25] treated acquisition simply as a technical process for obtaining materials, following the selection

process. Therefore, acquisition refers to the process by which needed educational materials and other literary materials (print or non-print) are acquired by the school authority, especially the library to suit the needs of the parent organization at the appropriate point in time. However, it is important to note that selection precedes acquisition.

What is Instructional Material/Media?

Many professional teachers and non-professional teachers alike have raised the issue of falling standard in Nigerian education system, particularly in the primary and secondary schools where solid foundation is expected. Irrespective of its controversy in recent times however, it cannot be separated from the standard of instruction in our schools. Most of our teachers are involved in verbalization of instruction (talking too much without imparting much knowledge), chalk and board, which sometimes is supported with some textbooks and other documentation. So, since the major objective of a teacher is to effectively communicate with his students, there is need to improve the process of instruction in schools through the use of instructional materials for better comprehensibility of the learners.

In teaching and learning process, there are some materials that help teachers to effectively deliver instruction to respective learners. These are referred to as "instructional materials". It is pertinent to give some classical definitions of instructional materials as noticed in the field of education. Nonetheless, before delving into giving the definition, it is necessary to state categorically that

'instructional materials' could also be referred to as 'Instructional media', 'Educational media/materials', 'Educational resources', 'Learning resources', 'Instructional resources' and 'Curriculum materials' (Ike and Chimezie, 2006) ^[10] and Gbamanja (2002) ^[8]. Similarly, it is worth noting that in the time past, various names which are no longer in use were used to describe instructional materials, such as: - 'visual aids', 'teaching aids', 'instructional aids', 'audio visual aids' (Ike and Chimezie, 2006) ^[10]. Instructional materials are the specific items experienced by students within a lesson that influence their learning (Newby, Stepich, Lehman, Russell, 2006) ^[15]. However, in this chapter, instruction materials or media will be used interchangeably. Allen (1963) ^[5] and UNESCO (1989) ^[7] defined instructional materials as devices which, present a complete body of information and largely self-supporting rather than supplementary in the teaching-learning process. Instructional resources are those materials and devices, be they real or representative, which the teacher uses to make the lessons more meaningful and understandable. They are real objects (realia) that help a teacher to teach or communicate effectively with the students so that the students will understand what he has to put across (Okwo and Ike, 1995) ^[19]. Imogie and Agun (1988) ^[4] defined instructional resources/materials as information carriers designed specifically to fulfill objectives in a teaching-learning situation. Gbamanja (2006) ^[8] maintained that curriculum/instructional materials include the things the teacher uses to assist the learners in their learning process. Obanya (1989) ^[16] viewed media as didactic material thing, which are supposed to make learning and teaching possible. Instructional material refers to anything (materials and equipment) that can help the teacher to communicate effectively his/her ideas to the students so that at the end of instruction the students can do that which the teacher stated in the objective (Awotua-Efebo, 2001) ^[7]. Abdullahi (1982) ^[1] declared that instructional materials are materials or tools locally made or imported that could make tremendous enhancement of lesson impact if intelligently used. Isola (2010) ^[12] referred to instructional materials as objects or devices, which help the teacher to make a lesson much clearer to the learner. Instructional materials are also described as concrete or physical objects which provide sound, visual or both to the sense organs during teaching (Agina-obu, 2005) ^[3]. "Instructional material" means content that conveys the essential knowledge and skills of a subject in the public-school curriculum through a medium or a combination of media for conveying information to a student. The term includes a book, supplementary materials, a combination of a book, workbook, supplementary materials, computer software, magnetic media, DVD, CD-ROM, computer courseware, online services, or an electronic medium, or other means of conveying information to the student or otherwise contributing to the learning process through electronic means, including open-source instructional material. For clarity, "Open-source instructional material" means electronic instructional material that is available for downloading from the Internet at no charge to a student and without requiring the purchase of an unlock code, membership, or other access or use charge, except for a charge to order an optional printed copy of all or part of the instructional material. The term includes state-developed open-source instructional ([http://www.statutes.legis.state.tx.us/Docs/ED/htm/ED.](http://www.statutes.legis.state.tx.us/Docs/ED/htm/ED.31.htm)

31.htm).

Why Do We Need Instructional Materials in Teaching/Learning Process?

Many scholars have succinctly answered the above question. Singh, Sharma and Upadhy (2008) ^[24] observed that mere chalking and talking will not make learning realistic and vivid. Similarly, Newby *et al* (2006) ^[15] as well have given a cogent answer to the above question, when the authors said that the design and use of instructional materials is critical because it is the interaction of students with those materials that generates and re-enforces actual learning. The authors advanced that if the instructional materials are weak, improperly structured or sequenced in a poor manner, limited learning will occur. They further opined that powerful, well designed instructional materials are experienced in such a way that they can be readily encoded, retained, recalled, and used in a variety of ways. As Simon (2001) ^[22] concisely stated, the meaning of "knowing" has shifted from being able to remember and repeat information to being able to find and use it. The importance of educational material is enormous and the most important thing is for the teachers to know their existence and their importance for the learners. As Gbamanja (2006) ^[8] puts it, the teachers must use them intelligently, and at the right time and place. Based on various reasons advanced by the scholars in the field therefore, the need for instructional materials in teaching/learning process is very essential. Thus, Ike and Chimezie (2006) ^[4], Udeinya, Morah and Eze (1991) ^[26], Okwo and Ike (1995) ^[19], Ituen (2004), Nacino-Brown, Oke and Brown (1982) ^[14], Awotua-Efebo (2001) ^[7], Gbamanja (2006) ^[8], Aggarwal (2007) ^[2], have enumerated the need for instructional materials in the classroom thus:-

1. It arouses multiple senses in the learning process. This is because most of the learning processes require all the senses.
2. Reduces the state of abstractness, therefore, making learning look very real
3. It motivates and promotes high degree of interest, and/or get interested in the subject matter
4. It saves time of the teacher. The time the teacher uses to draw on the board will be saved and used for more important thing.
5. Retention among learners will be highly improved, as learners make mental connections
6. The use of instructional material makes learning more permanent
7. Promote meaningful communication that makes learning more meaningful
8. They provide direct or first-hand experience with the realities of the social and physical environment
9. They encourage active participation in the classroom
10. They stimulate and motivate students to learn.
11. They help overcome the limitations of the classroom, by making the inaccessible accessible. This is especially true of film, filmstrips, slides, and the like.
12. The provide experiences that is not easily obtained through other materials and contribute to the efficiency, in-depth and variety of learning.
13. They supply concrete basis for conceptual thinking and reduce meaningless word responses of pupils.
14. Ensures effective and efficient instruction
15. Help in completing the triangular process of learning

(e.g. motivation, classification and stimulation).

16. xvii. Instructional materials are supplementary devices by which the teacher, through the utilization of more than on sensory channels is able to clarify, establish and correlate concepts, interpretations and appreciations.
17. xvii. Instructional materials help to individualize learning.

In general therefore, the purpose of all instructional media/materials is to arouse the five sensory organs of kinesthetic (touch); gustatory (taste); olfactory (smell); auditory (sound) and optical (seeing), which attempts to make learning more effective, real and interesting (Amadi, Iwu, and Onyemerekeya, (2001) ^[6] and Udeinya, *et al* (1991) ^[26].

Why Do We Selection Instructional Materials?

The selection of instruction materials for teaching/learning is a tedious task, especial as new technologies are developed, innovations made, and new methods of instruction are adopted; it has become imperative for teachers to adopt adequate strategies to select or choose appropriate instructions materials to meet various teaching strategies and learners learning styles and objectives. Newby *et al* (2006) ^[15] posit that strategic selection of media is based upon the needs of the learners, the desired outcome, and the constraints of the environment, as well as what methods and activities needed to be supported. The authors further stated that media are essential to good teaching. Newby, *et al* (2006) ^[15] emphasized that the extent to these technologies enhance teaching and learning is determined by the degree to which you properly select individual teaching aid tools and learn how to use them independently. The authors concisely summarized it in one sentence when they said – just as the proper application may lead to instructional effectiveness, efficiency and appeal, inappropriate application may cause learner difficulties and frustration. In as much as not all instruction materials/media are suitable for all learning, there is need to select those materials that are appropriate to learning environment, and encouraging intellectual freedom. It is necessary to select materials out of the lot abound in order to make learning more curious and real. Lastly, in order to select instructional materials for any teaching/learning, the teacher/instructor must know the instructional objectives; the merits and demerits of each of the instructional media intended to be selected. Thus, let us examine several factors upon which selection of educational media (visual) depends based on Newby, *et al* (2006) ^[15] standpoint.

1. Is the visual relevant to the instructional outcome?
2. Is the information depicted correctly?
3. Is the information current?
4. Is the information presented clear and simple?
5. Will the learners comprehend what is pitched?
6. Will it be big/small enough for the given purpose and size of the audience?
7. Is it aesthetically pleasing?

It will be noted that the selection of visual materials is not quite different with other instructional media, of which the above questions must be thoroughly answered before venturing into the selection and acquisition of any of such instructional media.

Types of Instructional Materials

There are lots of instructional media employed in teaching/learning process. These materials have been identified by Awotua-efebbo (2001) ^[7], Singh (2008) ^[23], and Singh *et al* (2008) ^[24]. They are: -

1. Print
2. Visual
3. Audio
4. Audio-visual

Classification of Instructional Materials

There are lots of instructional materials within and outside our environment. As Okwo and Ike (1995) ^[19] put it, these instructional materials are available in our schools, homes, markets, information centers, libraries, publishing houses and even along the roads. As the authors opined, inexperience teachers may find it difficult to identify, name and make use of these important instructional media for classroom instruction. In as much as there are many of these instructional materials around us, they are bound to be classified, and these materials are classified or categorized according to individual preferences, such as visual, audio or aural, and audio-visual. Others classify them based on the following criteria: - visual, audio or aural, and audio-visual, material/software, equipment/hardware, projected and non-projected media, two-dimensional instructional media, three instructional media (Okwo and Ike, 1995) ^[19].

Some classify based on senses, use, the nature of material, etc. Awotua-efebbo (2001) ^[7], Amadi, *et al* (2001) ^[6] and Ike and Chimezie (2006) ^[4] have identified the following methods of classifying instructional materials in recent times, namely: -

1. Book and non-book materials
2. Print and non-print materials
3. Hardware and software
4. Projected and non-projected
5. Real objects and models, text, video, audio, graphics (i.e., visual, slides, overhead transparency and multimedia).
6. Vision, sound, touch, kinesthetic, smell and test.
7. High technology (Commercial materials) and low technology (Locally produced materials).

The above classifications notwithstanding, however, some professionals in the field have identified and classified instructional materials based on the following criteria

1. Print materials (This includes – Books, Journals, Newspapers, Pamphlets, etc.)
2. Non-print materials
3. Hardware
4. Software
5. Audio
6. Visual
7. Audi-visual
8. Two dimensional
9. Three dimensional
10. Projected: Projected instructional materials are those media which require projection and electricity before they can be used in any teaching learning exercise (Amadi, *et al* 2001) ^[6]. This type of instructional materials includes, slides, filmstrips, overhear transparencies,

Television, Video-tapes, motion pictures, etc.

11. Non-projected

Criteria for Selection of Instructional Material for Teaching/Learning

There are certain decisive factors that guide the selection of instructional material in teaching/ learning process. Newby, *et al* (2006) ^[15] and Nacino-Brown (1992) ^[14] have summarized some of the major criteria for the selection of instructional materials for teaching/learning process. Among these are: -

1. **Learner Characteristics:** The learner and the teacher are the main focus of any teaching-learning process and should be considered before selecting instructional media for teaching/learning situation. The materials should be able to support and be consistent with the institution's or system's mission, vision, and goals.
2. **Materials must be Resourceful:** The purpose of instructional materials is to meet the learners' objectives. The instructional materials to be selected must meet the planned values, thoughts and experiences of the learners. So, the materials to be selected must be relevant to the pre-specified instructional objectives.
3. **School Environment:** The environmental condition of the school determines the type of instructional materials to be selected. The librarian/teacher-librarian cannot select any instructional material that requires power when the entire school has no power supply.
4. **Classroom Environment:** Let us assume that there is electricity in the school and there is none in the classrooms, it will be ridiculous to select an instructional material that requires electricity to function. Selection of a slide or a multimedia projector will be a wasteful exercise in this case. In a situation like this, it will be unthinkable for somebody to select a television as an instructional material. It will be worthwhile to select materials that will utilize batteries in the absence of electricity supply, such as radio and other instructional materials that may utilize batteries. Therefore, the environmental condition of the school and the classroom climate will dictate the type of instructional materials to be selected and acquired in any teaching/learning process.
5. **Teacher's Capability:** The materials to be acquired should be such that the teacher should be able to manipulate. It will be irrelevant to select and acquire materials that the teacher cannot manipulate. Purchasing such instructional materials that are not congruent to the teacher's capability will be counter-productive to teaching/learning process.
6. **Durability:** The material should be able to withstand heavy usage by students. The materials to be acquired should be able to stay for a longer time without being spoiled or damaged. The paper quality or substance made of the instructional materials should be good enough to stand the test of time.
7. **Visibility:** The lettering of the materials to be selected must be legible enough for the learners' comfort. They should be able to read the lettering without much difficulty. The lettering of the instructional materials to be selected should be large enough and easily seen by the learners irrespective of their positions in the classroom. If the materials to be selected contain diagrams, such should be clearly and boldly labeled for

- easy visibility by learners in their sitting positions.
8. **Budget and Cost:** In view of the present dwindling economies and constant budget cut by governments, where enough money is not easily allocated to most school authorities as they are most often times financially handicapped, the materials to be selected must suit the available financial resource and also worth the cost.
9. **Authority:** How competent is the author(s) or producer(s)? Is the material written by an authoritative scholar(s) or by quack(s)? Can the materials to be selected contribute to knowledge? Is the author biased in the coverage of the subject matter? Answers to the above questions must be addressed before embarking on selection of the intended instructional materials. Therefore, any instructional media chosen shall be well written or produced by competent and qualified author(s) or producer(s).
10. **Content:** Does the intended material to be selected suitable for the learners? Can the materials meet the expected objectives of the learners? Are the ideas and write-up logically presented? These questions are worth answering before selecting any instructional media.
11. **Arrangement:** Are the instructional materials to be selected detailed content, index, bibliography/references and glossary of terms. Is the materials well illustrated? Are the pictures coloured, clear or blurred? Answers to the above questions should be provided before venturing into selecting an item for acquisition.
12. **Mechanical Accuracy:** Are the font type, size, line spacing of the materials adequate for the learners? Are the prints clear enough for the intended audience? These questions should be considered before selecting an item for purchase.
13. **xi. Availability of Material:** Before selection, one must be sure that the materials exist and should be available to the teachers. If such materials could not be gotten by the teachers in the school, he/she should be able to get such in a neighboring school, or within the school community. Also, the teacher or students should be able to produce such instructional materials locally.
14. **xii Learner Differences:** Any educational media to be selected should take cognizance of learners' differences (age, background, language and interests).
15. **Controversial Material:** Are the materials to be selected bias and sensitivity towards student cultural, gender, ethnic, racial and religious backgrounds? However, the selection of materials on controversial issues will be directed toward maintaining a balanced collection representing various views.
16. **xviii. Selection Policy Statement and Procedures:** Before venturing into selecting instructional materials in any organization, the selector must look into the policy statement of the organization in regards to the selection and acquisition of relevant materials for the parent body.
17. **xix. Currency:** The instructional material to be selected should be current. The instructional material should be relevant to the contemporary society.
18. **xx. Flexibility:** The materials' selected must be flexible to manipulate, store, repair and maintain. They should be attractive enough to appeal to both the teachers and the learners.

19. xxi. Copyright: Selection and purchase of any instructional material should be guided by the current copyright laws.
20. xxii. Consultation: The librarian/teacher-librarian or the media specialist in-charge of selection of instructional materials should consult reputable producers and professional publishers' catalogues.

Recommendations for Adequate Use of Instructional Materials in the Classroom

The best instructional material can be as bad as any worst instructional material if it is not appropriately applied to teaching/learning process. The best instructional materials cannot apply themselves in teaching and learning, but by the teachers, and if not well applied, it becomes as useless as the worst instructional material. Thus, the use of instructional materials must be guided for proper/effective usage. Amadi *et al* (2001) ^[6] has discussed on the general uses of instructional material. Consequently, they quoted an unknown author for the under-listed hints on the effective and efficient use of instructional materials in the classroom as follows: -

1. Checking Instructional Materials: The author stressed that before a certain instructional material is brought into the classroom, that all works concerning the particular instructional material should be complete. However, this does not include the additions the teacher will add during the presentation. The instructional material should be kept within the reach of the students and should be arranged in order of presentation. This method saves the teachers from being confused during the lesson.
2. Design: Instructional materials so designed should be simple and straight to the point. In this case, the letterings, pictures and the diagrams should be readable to the students. The material should be visible to all students irrespective of his position in the classroom. In case of a chart, since it cannot replace a textbook, it is pertinent not to overload it with information, as this can easily cause distractions.
3. Adequate in Quantity: The instructional materials to be used in the classroom should be sufficient for most of the students. It will be funny to provide 5 instructional materials for a class of 30-50 students. This will not give room for effective and efficient learning.
4. Variety: Some lessons require more than one instructional material. In as much as adequacy of is adhered to, the instructional material should be convincingly employed for the benefit of the students. It will be useless if the materials are in abundance, yet they are not properly utilized.
5. Relevance: The instructional material to be presented to students during lessons should be related to the topic under discussion. If this is not done, then, the instructional material becomes useless, and will not aid to knowledge acquisition.
6. Integrate Instructional Material: The author asserts that the relevance of instructional material is enhanced by integration. Therefore, instructional material should be neatly and smoothly applied to the lesson. Good instructional material is useless if not property integrated in to the lesson. Instructional materials should be planned along with the lesson in order to apply

7. them properly/sequentially during lesson presentation. The author opined that some student-teachers do not use their instructional materials at the proper time because they did not plan their lessons along with the instructional materials. That is, either they borrowed the material(s) on their way to the classroom, or the materials will be slipped into the classroom when the lesson is in progress.
8. Check Spelling and Grammar: With reference to the above point, it has been proven that many student-teachers had no time to revise their instructional materials before the lesson period. This situation gives room for misspellings, and factual mistakes are recklessly committed during students' teaching practice. Students-teachers and teachers alike are advised to revise or examine instructional materials, and also employ the services of their colleagues to proofread the write-ups on the materials before lessons to avoid vital mistakes. This, if not properly guided may present the teacher in a bad light.
9. Standardize Instructional Materials: The instructional material (s) presented should be able to aid the learners. The material presented to learners should not be too complicates as to discourage them or too simple as to be meaningless to learners. The instructional materials to be presented to the students should be challenging and able to pose some problems for them to solve.
10. Display of Instructional Materials: Teachers and student-teachers should be able to display the required instructional materials in such a way that all the students in the classroom will be able to see. It will be useless presenting an instructional material that will not be seen by many of the students.
11. Supervision of Instructional Materials: Students need to be supervised during the use of instructional materials in the classroom, especially when the materials need technical manipulation. Sophisticated instructional materials need close and careful supervision by teachers and/or student-teachers.
12. Avoidance of cruel Animals: In order to make some lessons real and interesting, teachers and student-teachers alike do bring life animals or pests into the classroom. In situations like this, teachers and student-teachers are advised to make adequate arrangements to protect the students. The dangerous animals or pests should be properly feed, caged or tied so that they do not harm the students during lessons.

Summary

Instructional material use in teaching and learning process is a very important aspect of instructional process that aids learners' acquisition of knowledge. In this write-up, the concept of selection and acquisition of instructional materials were defined. The authors highlighted on instructional media and why we need and select it in teaching/learning process. Also discussed are the types of instructional materials and its contemporary classification. Criteria for Selection of instructional material for teaching/learning, including highlights on the adequate use of instructional materials in the classroom were not left out. The authors finally made recommendations on how teachers can adequately utilize instructional media to achieve the stated objectives or goals.

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