

INSTRUCTIONAL MATERIAL: A BIG CHALLENGE TO SECONDARY EDUCATION IN THE 21ST CENTURY

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Abstract

For Secondary education to achieve its goal of preparing students for useful living and for higher education, and also for it to adjust properly to the needs of the present century there is need to improve instructional materials in the system. It is worthy to note that most of our secondary schools cannot be described as child friendly in nature; this in itself encourages absenteeism or truancy in the students. The physical facilities seem unkempt and dilapidated. This alone, can lead to ineffectiveness of the system. It is against this background that this paper tries to focus on the importance of instructional materials to the secondary school system. Recommendations were made in line with the discussions in this paper.

Introduction:

There is no gain saying that curriculum without human and material resources back up would fail to produce the desired results. In other words, adequate human and material resources must be provided in order for the curricular to be translated into meaningful results. However, the present state of infrastructure in the secondary schools leaves more to be desired. There are inadequate numbers of laboratories, workshops and classrooms, blackboards, chalks, library etc. to support even the basic care programme of secondary schools. If this should continue this way, it then means there will be low academic achievement which will not augur well for both the state and the system. It is against this background that this paper tries to look into what instructional materials are and their importance to secondary school system.

Instructional Materials

According to Nnaka and Anaekwe (2006), instructional materials or resources are equipment and materials, which the teachers can use to enhance the realization of the instructional objectives. For example, in the teaching and learning of science, technology and mathematics subjects, the laboratory constitutes the foremost resource centre. The importance of instructional resources cannot be overemphasized. Generally, they arouse the sense organs in the process of learning, predisposes teaching to be activity-based, thereby helping to concretize abstract concepts (Maduabum, 1989; Iwu, Ike and Okoye, 2002). Kofar (1999), defines teaching resource materials as veritable channels through which instruction can be imparted in the classroom. Instructions given in form of practical work improve the learner's level of understanding. The quality of education that our children receive bears direct relevance on the availability or lack of physical facilities and the overall atmosphere in which teaching and learning take place.

Instructional resources are the resources or teaching materials that the teacher uses in presenting his lesson so that the students can easily understand what is being taught. Instructional resources, according to Offorma (1997), are all about ways and means of making teaching and learning process more meaningful, effective, productive and understandable.

The end result is the attainment of overall educational goals- To Eya (2004), instructional resources stimulate learners' interest; help both the teacher and the learner to overcome physical limitation during presentation of subject matter. Douglas (1991), recalled that instructional resources could be regarded as "the nervous system" of the teaching and learning process. As a system it cannot be separated from classroom teaching, otherwise it could paralyze the entire system or process when neglected.

The use of instructional resources is often bogged by teething problems namely: inadequate materials, economic recession, and unrelatedness of the educational resources, students' population explosion and accessibility of focal materials network. To solve these problems, Betiku (2000), advised teachers of mathematics to improvise instructional resources where necessary. Therefore, one can rightly say that instructional materials are the materials, which the teacher uses in teaching in order to make his teaching real and meaningful. Onyejemezie, (2002), is of the opinion that, the use of

instructional materials depends on what the teacher makes of them. By implication, instructional materials do not achieve any of the attributed values on their own rather, their usefulness depend on what the teacher makes of them. If the teacher does not have the knowledge and manipulative skills of using these instructional materials in teaching the learners will definitely find it difficult to learn.

From the above definitions, we can see that, to facilitate learning and to improve instruction which will in-turn improve academic performance in students, school facilities and instructional materials are indispensable to both teachers and students. With these materials, teachers confidence in their teaching will be boosted, their subject matter cleared, and the students' interest will be captured in the lesson.

Teaching - learning resources are not just the various methods which the teacher employs in finding solutions to instructional problems. Resources for teaching include the various materials in form of tools, devices, gadgets, and or equipment and machines used by the teacher during the teaching learning processes and which help to facilitate the attainment of the set objectives of instruction. In fact, teaching- learning resources are methods and materials which help the teacher to make a realistic approach to his job by effectively communicating his ideas, opinions, knowledge, skills etc, to the learner. They are channels of communication by means of which the teacher tries to successfully transmit his message, in form of a lesson, to his students.

Classification of Teaching -learning Materials

While there is in existence a wide variety of teaching - learning materials, they all tend towards the same goal: to facilitate the learning of the learner by helping the teacher to more effectively communicate his messages (the lessons) to his students. But in spite of the fact that all teaching -learning materials serve the same purpose of enhancing teaching and learning, they are usually classified according to the senses to which they appeal. While some resources appeal to the visual sense (sense of sight), others appeal to the auditory sense (sense of hearing). There are still those resources that appeal to the senses of sight and hearing simultaneously.

Onyejekwe (2000), classified material resources according to their operational techniques. In this classification he try to distinguish those media (resources) that are non-projected, those that are projected as well as those that are transmitted.

- 1. Visual resources** are teaching - learning materials that appeal mainly to the sense of sight. They are resource materials which the teacher in the course of his teaching, makes the learners see as a way of making his teaching and the students' learning more meaningful and effective. The principle behind the use of visual resources in teaching is that man tends to remember more of what the eyes saw than what the ears heard. It is also generally believed that much more is learned through the sense of sight than all the other senses put together. These assertions are in consonance with the theory of the 'eye-gate'. This theory sees the eye as the main gate into the human mind. And because of this singular position of the eye, learning through it is much easier and faster with a higher rate of retention. The old sayings that 'seeing is believing' and that 'one in the eye is worth two in the ear' all lay credence to the important position of the sense of sight in much of human activities and achievements. Visual resources are among the oldest, commonest and yet the most effective of teaching- learning resources. They include the different types of educational boards, stilt and motion pictures, the print media, charts, graphics, maps and globes, postures, models, and mock-ups, as well as specimens. The computers as well as all forms of programmed instruction come under visual resources as they appeal mainly to the sense of sight.
- 2. Audio Resources:** These are teaching - learning materials or educational media that appeal exclusively to the sense of hearing. In other-words, audio resources are the various means of recording and transmitting the human voice and other sounds for purposes of teaching and learning. The most important of all aural resources for teaching and learning is the teacher's voice. The effectiveness of the teacher in realizing the goals of instruction depends, to a large extent, on his ability to use his voice well. A teacher who mumbles cannot hope to effectively drive his point's home to the learner. He must speak in a clear and modulated voice for him to impact positively on the learning of the learner. In a word, an effective teacher is the one who

brings in life and vitality into his teaching by an effective use of his voice. Other-teaching-learning resources that appeal to the sense of hearing include the radio, the radio - cassette recorder; the record player and the compact disc.

- 3. Audio-Visual Resources:** Audio-visual resources are otherwise referred to as the multimedia system. These are teaching-learning resources that appeal to the senses of hearing and seeing (aural and visual senses) at the same time. In applying an audio-visual, resource in teaching, the teacher does not only make the learner see what he wants him to learn) he also makes him hear, at the same time, what he wants him to learn. The principle behind the use of audio-visual resources in teaching and learning is that much more is usually learned when the learner is made to see and hear, simultaneously, what he is being guided to learn. In other words, a combination of seeing and hearing at the same time is much more effective in teaching than either only seeing or hearing. Studies have shown that when a learner sees and hears what he is supposed to learn at the same time, he tends to learn more and more easily, remembers more and possibly transfers more of what he has learned from one situation to another. Examples of audio-visual resources are the television (Educational and instructional Television), the visual compact disc (VCD) and the sound-slide set.

Projected Resources

Projected resources are educational media that require the use of projectors and hence electricity for their picture of something on a flat surface in order for people to easily view it. And it is usually achieved by means of projectors. These (projectors), are machines that can cast the images on a film or slide on a screen or wall for viewing. And in projecting the images, the projector usually enlarges them so that the pictures cast on the wall or screen become large enough for many people to view them without difficulty.

Projectors exist in a variety of forms, with each type projecting different types of materials. Examples of projectors include the overhead projector, the film- trip projector, the slide projector, the micro projector and the opaque projector. While the overhead, the filmstrip and the slide projectors project only transparencies, the opaque projector projects only opaque or non-transparent materials. The micro projector, on the other hand, projects both slides (transparencies) and micro specimens that would otherwise be impossible to see with the naked eye. The common thing about all these projectors is that they all project only still pictures.

Transmitted Resources

Transmitted resources are those that work on the principles of transmission. Transmission is the process of sending and receiving messages or electronic signals by means of radio waves. A number of teaching learning resources transmit messages and information from one location to another through radio waves. These include the radio and the television. The school facilities play a crucial role in the development of the three domains of Bloom's Taxonomy of educational objectives namely, cognitive, affective and psychomotor (Wheler, 1978), in (Onwurah, 2003). Educational facilities are needed for developing cognitive areas of knowledge, abilities and skills, which are prerequisites for academic achievement. They are essential for developing values, commitment, positive emotions and social interactional sensitivity in learners. In addition, they help the school to develop the hands and muscles of learners. From the above discussions, we can deduce, that a, positive relationship exists between academic performance of students in Schools and the availability and nature of the physical facilities and equipment.

Importance of Instructional Materials

When carefully selected and used according to specified principles, instructional resources achieves the following:

- They supply a concrete basis for thinking and for alerting new vocabulary, concepts and generalizations.
- They provide a common background to the entire class or group for new learning. While using

the chalk-board, for example, the entire class is usually united in a way quite unattainable if the students have to keep looking into their individual textbook. Listening to a recorded speech and watching a film are other good, examples of providing a common background to the entire class for new learning.

- They enhance learner's interest in the study as he is made to see, hear, touch or smell what he is being guided to learn.
- They increase the rate of learning and facilitate the rate of retaining what has been learned because the learner experiences learning himself and does not have to depend solely on the teacher's experience. While helping the fast learner to learn even faster, instructional resources help the slow learner to increase the rate at which he learns.
- They save the teacher's time and effort as the teacher does not need to talk a lot. Letting the learner see or hear or feel what the teacher wants him to learn is a good means of making the job of teaching less verbose and time consuming. With the use of appropriate teaching learning resources, factual information and or skills are learned in less time and with little talking and explanation
- They enhance the transfer of what has been learned. Because the learner saw it, because he heard it carefully explained by an expert, because he tasted and or perceived its smell, the learner can more easily transfer his experience in the classroom to similar situations outside the classroom.
- They provide a feeling of activity and reality in strange, remote and long ago situations. This is particularly true of motion pictures (films). Films have the capacity to make the viewer feel that he is an active participant in a movie. And what is naturally impossible is made to look possible by the power of simulation. Moreover, films are not limited by time and space and so, long-ago situations can be successfully re-lived for study and for other purposes.
- The production of instructional materials makes for the active participation of the learner in the teaching-learning process. Such participation engenders interest and enhances learning as it is, to a large extent, what the learner does that he learns. Student that participate in the production of their learning materials are motivated to learn as they see themselves as relevant factors in the important process of developing and expanding knowledge.(Onyejemezie 2006).

From the above discussions, it is true that careful; selection of and the correct application of appropriate and relevant resources in teaching, to all intents and purposes, enhance successful teaching and learning. Hardly is there any unit of instruction or theme or topic that is not amenable to the use of instructional resources, nor are there any teachers or students who do not require the use of resources. .

Recommendations

1. It is recommended that Government should enhanced allocation of funds to secondary schools which will be used in building enough and quality instructional materials, building more office blocks and classrooms to improve the physical environment in order to enhance teaching and learning.
2. Principals, should insist on maintenance culture, especially on the part of the teachers and students, so that, they will help to maintain the existing infrastructure and teaching resources.
3. Teachers equally, should cultivate the habit of improvisation. Once there is a practical class and may be there is no real object for the practical lesson, the teacher should try and improvise; this will help to concretize his / her lesson.
4. On their own students should be given assignment that will make them improvise for some of the instructional materials, this will help them to internalize what they have learnt.

Conclusion

Instructional material is a very big challenge to secondary education in this 21st century. This is because the performance of students at this level of education has been dwindling seriously. This could be supported by the level of poor academic performance of students being experienced at this level,

currently. So, this paper has pin-pointed inadequate instructional materials at this level as one of the causes of this low academic performance. The paper has also tried to explain what instructional materials are and its importance to the system. Recommendations were also suggested to improve on this in order to help us achieve the goals of secondary education.

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