Utilization Of Instructional Materials In Distance Education Programmes In Nigeria

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Abstract

Distance education is a special kind of adult education. It includes all those teaching methods, the interactive as well as the pre-based self-instructional materials. Therefore, distance education being an instrumental environment in technology that is used to bridge the instructional gap caused by geographical separation between the teacher and learners, the use of instructional materials in the delivery of the programmes is of paramount importance. This is because instructional materials are used to supplement or complement the teacher's tasks. They include printed materials, like textbooks, newspapers, radio cassette, television, computers, telephone, etc. This paper therefore looked into the concept, characteristics and criteria for the selection of learning materials, types and the effects (importance) of utilizing learning materials in distance education, and the problems affecting the use of learning materials in distance education. Finally, recommendations were proffered.

Introduction

Distance education is a form of education, which the student receives at distance from the instructor. Perraton in Anyanwu (1988) states that distance education is an educational process in which someone removed in space and time from the learner conducts a significant proportion of the teaching. Also, National Teachers' Institute , N.T.I. (1990) describes distance education as a method of acquiring knowledge in which the teacher and learner meet face-

to-face only occasionally and in which the greater part of teaching is done through printed materials or the electronic media (radio, television, telephone, etc.). Therefore distance education describes a set of teaching and learning strategies that can be used to overcome spatial and temporal separation between educators and learners. These strategies or methods can be integrated into any educational programme and used in any combination with any other teaching and learning strategies in the provision of education.

The history and successive developments of distance education has been described to belong to three different generations (Shabani and Okebukola, 2001:20). According to them, the medium for the first generation was written and printed materials. While writing had been in use for centuries, the introduction of new printing technique enabled low-cost production of textbooks. From the middle of the nineteenth century, the establishment of railways systems and fast and economical national postal services enabled the distribution of teaching materials to large numbers of geographically disposed learners. In addition to generally available textbooks, specially developed instructional materials were limited and may have included a reading list and sample questions which were marked by correspondence tutors. Shabani and Okebukola (2001) noted that the invention of radio in the 1920s saw the beginning of radio-led courses consisting of a series of talks; occasionally a set book or other printed materials and local study groups were included. From the 1950s, TV-led courses have been extensively used, often with print and local groups and occasionally student assessment. The settling up of the Open University of the United Kingdom in 1969 marked the beginning of the second generation. That was the first time that a deliberately integrated multiple media approach had been used for distance education. The Open University developed large quantities of high-quality, specially designed distance learning materials. One-way communication, from university to students, was through prints, integrated with broadcasts (audio-cassettes) were added later). Two-way communication, between tutors and students, was through correspondence tutoring, face-to-face tutorials and short residential schools. The third generation of distance education uses information and communication technology as its basis, offering two-way communication in various forms (texts, graphics, sound, moving pictures) either synchronous or asynchronous. It can facilitate greater interactivity between tutor and student, between student and student, and between student and learning resources of various kinds.

In Africa, the distance education and associated technology applications are not new tools. Saint (2001:41) observed that in Anglophone Africa, University of South Africa (with enrolment of 117,000) began in 1946 as a correspondence University. It has evolved into one of the world's largest open distance education universities. Today, the landscape of distance education in Africa is changing rapidly. In the 1950s and 1960s, Rapid Result College, Wesley Hall and Bennett College were popular correspondence institutions in Nigeria. But in 1974, the University of Lagos sought the assistance of International Extension College in the United Kingdom (UK) to establish the Correspondence and Open Studies University (COSU) later known as Correspondence and Open Studies Institutes (COSIT). This was the first conscious attempt made to establish a distance education unit as part of a University in this country (Faghamiye, 2000).

The National Teachers' Institute (NTI) started as a distance education organization in 1976 with the support of UNESCO. It began by training Grade II teachers (TC II). In 1990, the Nigerian Certificate in Education (NCE) Programme was introduced to replace the TC II programme. Now a number of universities and polytechnics in Nigeria run education programmes which fall under the broad definition of distance education. Mohammed (2000:11) stated that these institutions include Ahmadu Bello University, Zaria, University of Abuja and Federal Polytechnics, Oko, among others. It is only the NTI, Kaduna that provides single mode of distance education programme in Nigeria. Others run dual mode as they offer distance education programme in addition to the traditional or conventional face-to-face teaching. Some of the institutions have made creative use of national broadcast radio, audiocassettes, and more recently, e-mail. Notably, the 24 Federal Universities in Nigeria are gradually becoming linked electronically through the Nigeria Universities Net (NUNET). Nigeria's centre for distance learning, Abuja offers Bachelor of Arts and Bachelor of Science degrees in 14 subject areas (Hamza, 2000:12).

Therefore, it becomes pertinent that good learning materials should be used in the teaching and learning in distance education programmes if desired result is to be achieved. This is because the best way to help learners to learn is to bring them face-to-face with the realities of the world, which education intends to introduce to them. Eze (2005:16) noted that one way through which this can be achieved is by using real objects in real life situations for instruction. Where real life situations are not possible, the alternative is for the instructors to use representations of real life situations. These representatives are materials, devices and techniques, which help the

instructor to make realistic approach to his job, whether real or substitute. Iko (1991:8) emphasized that those representations help the teacher to convey the intended message effectively and meaningfully to the learners so that they utilize the experience gained to reach overall educational goals. According to Eze (2005:2) educators have classified learning materials that can be used in aids. The visual aids or materials are the learning materials that can be used in teaching-learning into three categories: visual aids, audio-visual aids and audio aids. The visual aids or materials are the learning materials that illustrate sight. They are available and common within our environment. These materials include pictures, diagrams, photographs, charts, chalkboards, maps, exhibits, bulletins, models, mock-ups, slides, filmstrips, chalkboards, drawings and cartoons. The audio-visual aids are learning materials that combine both the hearing and sight stimuli. They include sound filmstrips, television, printed materials with recorded sound, videotapes and cassette. Lastly, the audio aids are learning materials that illustrate only hearing stimuli. They include audiotapes, cassettes, phonographic records, audio cards, telephones, radio etc.

Nwoji (2002) observed that these learning materials contribute to the teaching-learning process in the following ways: holding of students' attention; retention of information, provision of concrete and realistic experiences; stimulation of imaginations and self activity; clarification of abstract ideas; reinforcement of verbal messages; showing of inaccessible processes, materials, events, things and changes in time, speed and space; promotion of greater acquisition and longer retention of factual knowledge provision of opportunities for independent and individual learning; reinforcement and enrichment of the mastery of content; prevention and correction of misconception of abstract concepts, spatial relations and special details, and provision of high degree of interest.

It has been reiterated that the use of learning materials enhances learning experiences and leads to interaction within the learning environment. Therefore, the interaction culminates in increases interest and acquisition of competences needed for the occupational world. Olokor (2006:6) stated that the supply of facilities at school, creation of personal interests in students and learning experiences are sine qua non for the development of saleable skills in students.

Characteristics and Criteria for Selection of Learning Materials

It has been observed that human beings learn better than when they hear, see, and touch. So, the need arises that to help the learner, the teacher

should make available learning materials and resources to aid students learn. Olaitan and Ali (1997) state that learning materials are sources from which a learner may turn and secure helpful information for the attainment of instructional objectives. They are materials designed to help the process of learning. Onyejemezi (1981) expressed views on curriculum materials and approach to his job. She further stated that the learning materials help the teacher to convey the intended message effectively and meaningfully to the learners so that the learners receive, retain and apply the experience gained to reach overall educational goals. Eze (2005), learning material is any of device with instructional content or function that can be used for teaching and learning process. Such materials may include magazine, charts, pictures etc. Learning materials are often referred to as instructional (learning) aids or devices (Nacino-Brown, Oke and Brown, 1982). The materials are called so because they are used to supplement complement the teacher's tasks.

The Characteristics of Learning Materials

Dhanarajan (2000) pointed out that learning materials must be well designed instructionally, recognized and address potential students' learning behaviour and styles; take note of learner's study circumstances and life experiences and be user friendly. In addition, Mohammed (2000) stressed that the language of the learning materials must be simple, unambiguous and communicative. The materials have to be structured and sequenced in a way to cater for all types of learners. Also, Olaitan and Ali (1997:15) stated that for the learning materials to be used meaningfully and effectively, they must meet the following characteristics:

i) ***Variety:*** The learning materials must be capable of providing varied learning experiences. The teacher should not use a single learning materials as it limits opportunities for students to see different aspects of a given problems.

ii) ***Accuracy:*** The information given must be accurate.

iii) ***Economy:*** The material should be economical, both in terms of cost and time of use.

iv) ***Adaptability:*** Learning materials should be adaptable to the prevailing environment or teaching situations. Also, the materials should be adaptable to the level of development of the individual student.

v) ***Durability:*** Learning materials should last for quite along period of time. For example, the electronic media are good learning materials that can be stored for a long period of time.

The Criteria for Selection of Learning Materials

Olaitan and Ali (1997:4) emphasized that when selecting learning materials, there are certain criteria on which the selection should be based. They are:

i) ***Age of the learners*:** When selecting learning materials, select those that suite the ages of the learners. It will make the materials to be less complex for them to understand. Materials used, if above or below the age of the learners in complexity, increase their difficulty in comprehension of the lesson or performance of assigned activities.

ii) ***Entry Level:*** This has to do with the previous knowledge of the learners. Each material used at any level of comprehension must be such that fits within the level of the comprehension of the learners. It must be built upon acquired experiences. Therefore, the instructor should not use materials that require high level of thinking in lower classes.

iii) ***Quantity and quality of learning materials available:*** Learning materials that are durable should be selected for instruction. Before selecting the learning materials, make sure that the quantity of such materials available would be enough to serve all the learners. If the materials are not enough, it may lead to disturbance in the class, thereby causing inattentiveness. Also, check on the quality so as to ensure that they meet the required standards.

iv) ***Cost of learning materials:*** Always use learning materials that are of moderate costs to avoid wastage.

Types and the Effect of Utilizing Learning Materials in Distance Education

According to Nwoji (2002:10), some of the learning materials used in distance education include: printed materials, newspapers, radio programmes, audio cassettes, television, videotapes, computers, telephone, etc.

Printed Materials: Egwuatu (2000:21) noted that in correspondence education, the printed word is the key medium of communication between the teacher or correspondence institution and the students. The teacher prepares educational materials and sends them to the students. The students read them at their own time and respond to questions and quizzes related to be text. Nzeribe (1991) affirmed that the printed materials are usually specially written, comprehensive, complete and precise in their presentation because, they teach a wide range of student. The whole success of distance education programme, therefore, depends to a large extent, on the provision of adequate course materials for the learners. According to Race (1989), all materials that are produced through text, graphic or photographic

representation and reproduction fall under the category of print technologies. They include: Books, pamphlets, specially written commentaries or supplements to already published materials; specially written self-instructional texts or tutorials-in-prints or tutorial study guides, tests, notes, or assignment requirements, maps, charts, photographs, poster and newspapers, journals and periodicals. Nacino-Brown, *et al*, (1982) stressed that printed materials are the most accessible, and they are easy to use.

Newspaper: Keegan (1990:25) observed that the use of newspapers is an alternative to the use of printed materials, in the form of textbooks, in the distribution of course materials. As such, course materials are printed as part of the newspaper, which can be extracted and stored for reference use by the learners. He further observed that in some countries, newspapers provide free spaces for education aimed at either the youths or at the adults.

Radio Programmes The radio has been found to a valuable too in teaching students how to listen effectively. It provides them with opportunities to develop the ability to listen critically and with discrimination, a skill which they increasingly need as they go up the educational ladder. Nacino-Borwn et al. (1982) reiterated that one of the significant values of the radio is that radio programmes enrich curriculum materials for learning. Often radio, broadcasts can supplement older materials in textbooks, thereby giving an air of freshness and newness to the subject being studied. Radio plays an important part of the distance education system because they provide certain closeness to reality, and people depend on it for information, entertainment and education.

Audio Cassettes: The tape recordings have the same educational values as the radio. However, they are used whenever the teacher chooses. The record player can be played over and over if necessary at exactly the time the materials are needed. This helps the learner to master the topic contained therein.

Instructional Television: On instructional television, Nwana (1991:21) emphasizes that the teacher is both seen and heard by the student. Aided by a variety of audio-visual equipment, instructional television is, perhaps, the most advanced simulation of face-to-face classroom contact. The television programmes emphasize the experimental sides of science technology by demonstrating complex equipment and by leading students through experimental procedures.

Video Tapes: According to Keegan (1990:3) video tapes/discs are gadgets that enable the distant learner to control the broadcast of the television programme. They are aids that help the distance education learner who is separated from the teacher to enjoy a face-to-face instruction indirectly.

Computers: The American Library Association in Oketunji (2000:9) defined information technology as the application of computers and other technologies to the information handling, acquisition, organization, storage, retrieval and dissemination. Computers and their emerging corollaries like telefasimiles (FAX), electronic mail (e-mail) and other yet to emerge make student-teacher interaction very easy and fast.

Telephones: Telephone is used as a means of maintaining a two-way communication between the teacher and the students in distance education. It is used in combination with the radio as the "radio-tutorial" or in a teleconferencing when call-answering services and phone-in programmes, initiated by either the student or the teacher, have become some of the most effective ways of using television in the remote mode of education (Egwuatu, 2000:92). The telephone offers the opportunity for interactive exchange of information among large groups of people and thus aids the distance education process.

The Effects of Utilizing Learning Materials in Distance Education:
Mohammed (2000) noted that in Distance Education, students interact more with their course materials than with tutors. According to him, the course materials must be specially developed to provide opportunity for "student-tutor interaction in a teaching-learning process. The Distance Education learning materials perform the following functions:

i. help to express an abstract idea or concept which is difficult;
ii. provide visual relief from amounts of text;
iii. motivate learners;
iv. make it easier for learners to remember information, and
v. appeal to the learner's intellect, or emotion, or both at the same time (Grachuhi and Matriu, 1989:109).

The Distance Education learning materials according to Shabani and Okebukola (2001), should represent the teacher in all aspects except for the physical presence the teacher in the classroom.

Discussing specifically on the on-line course materials, Shabani and Okebukola (2000:20) noted that some of the major advantages of using learning materials to include:

1. *Accessibility:* to a large number and richer mixer of learners. By November 2000, there were over 650 million users of the internet connected through over 10 millions computers. The estimate is that about ten percent of the daily visitors to the internet are able to subscribe to higher education courses. This will provide higher education for many more students from across the world and a richer mix of ethnic, regional and socio-economic backgrounds.
2. *Relative ease and comfort of online study:* Access to the internet is said to be time or space bound. This means that access can be achieved at home, in the office, at the airport, at the train station and even as you walk along the street. So, as long as one is able to access the internet, his on-line course materials are within reach.
3. *Lower Cost:* A single set of materials sitting on a server is available to millions of accredited users. Overall, mounting of courses on-line is significantly cheaper.
4. *Environment Friendly:* It is claimed that e-learning is environment friendly. It does not constitute any damage to the environment.
5. *Easier to Manage:* The materials for delivery are few and hence the management team is slimmer.
6. *Rapid feedback:* Feedback to students in on-line delivery is quicker and more efficient. Learner's feedback is through the internet, which is instantaneous. There is no postal delay.

Problems Affecting the Use of Learning Materials in Distance Education Programmes

Lockwood (2000) outlined the following as the education pitfalls in the use of learning materials in Distance Education Programmes.

1. ***Potential for poor use:*** As the use of technologies develops, a more sophisticated, critical understanding and rhetoric emerge. Nevertheless, in the absence of this, it is currently necessary to remember that learning materials such as information and communication technologies offer no magical panacea to educational problems, and can thus be used just as poorly as any other technology.

2. ***Resource design is complicated and time-consuming*** : The complexities of resource design and development demand time and high-level skills. This problem becomes particularly acute in environment where human and financial planning leads to heavy expenditure in the procurement of learning materials. That, in turn, absorbs budgets for curriculum and resource design and development.

3. ***User unfamiliarity***: The most potential users, both educators and learners, are likely to unfamiliar with all the learning materials. Of course, this depends on the nature and level of the educational intervention, but it is a pitfall that needs to be factored into conceptualizing the use of such materials. Again, the strategic decisions to develop learning material strategies are usually taken with little or no reference to the capacity of the educators who will be expected to drive these strategies.

4. ***Technical constraints***: These still pose very serious concerns in the use of new generating learning materials such as information and communication technologies. At a first level, it is necessary to consider carefully whether or not potential learners are likely to have access to the technological infrastructure to be able to participate in distance learning activities. These would include access to both the necessary computer systems and to appropriate telecommunication infrastructure to be able to participate in distance learning activities. If they do not, then investing extensively in the information and communication Technology learning could be very wastefully.

In her own contribution, Anujeonye (2008:25) pointed out some other problems that could hinder the effective use of learning materials in Distance Education Programme as:

a) ***Cost:*** The procurement of learning materials for distance education programmes requires a lot of money. The cost of procuring the materials/facilities and accessories are very high. Maintenance cost of these facilities is not left out. Also, provision of conducive atmosphere for maximum operation of the facilities and their gadgets requires a lot of money.

b) ***Lack of relevant software:*** The power of technology is the content and communication, but Nigeria lacks the relevant software for that. In short,

the software that is appropriate and culturally suitable to the Nigerian education system is in short supply.

c) ***Limited access to the Internet:*** In Nigeria, there are few internet providers. Such internet providers are made up of Nigerians who are in partnership with foreign information and communication companies. Most of these companies provide poor services to customers, while those who provide reliable services, charge high fees, thus, limiting access to the use of the Internet.

Continuing, Egwuatu (2000:5) maintained that the general problems associated with distance education learning materials include:

i). ***Non-uniformity in the standard of teaching:*** The standard of teaching may not be uniform at the study centres of the same institution. This is because some centres may have good teachers while others may not have, and the whole students are expected to write the same examination.

ii) ***Truancy:*** This, whether on the part of the teacher or the learner, militates against a successful execution of the distance learning system. Students who are truants may not take their assignments seriously. Such students will attempt to cheat during examinations because they want to get certificate at all cost.

ii) ***Fewer Programmes in Science and Technology:*** Most programmes being run by institutions under their distance learning system are in education and management science. In future, this imbalance may lead to the over production of graduates in these fields to the detriment of Sciences and Engineering.

Recommendations

To address the problems using learning materials in distance education programmes squarely, the following recommendations are proffered:

- ❖ Institutions that are involved in Distance Education Programmes should create learning resource centres in all the study centres where access would be provided to course materials, computers for computer-assisted instruction and other supplementary learning materials for the learners.
- ❖ There is need to train staff regularly through seminar, conference, workshops, short and long-term training. The training would help them to

meet up the demand of learning materials like the new information technologies.

- ❖ Distance Education institutions should ensure that there is technical back-up for learners where they would be properly guided and advised. Also, the administrative set-up would be such that opportunities would be opened for all to have access in the delivery and dissemination of knowledge.
- ❖ Government, on her own part, should ensure that erratic power supply is a thing of the past, as regular supply of electricity would mean regular use of the information and communication technology and other learning facilities.
- ❖ Government should ensure international connectivity because for Nigeria to be fully integrated into the global communications system, it needs an infrastructure connected to systems abroad through international links to form part, ultimately, of the global networks. This places opportunities that exist elsewhere in the world within the grasp of Nigerians for wider access to knowledge.
- ❖ Recruitment of well-trained personnel in the use of resource materials and even the Information and Communication Technology should be done.
- ❖ Efforts should be made to protect learning materials/gadgets that were installed. This means that adequate security is needed.
- ❖ Regular maintenance culture on the learning materials should be encouraged to avoid redundancy of materials.

Conclusion

Distance Education programme opened a vista of opportunities for educational and professional improvement for people who would otherwise have been unfortunate to afford a certain kind of education. Through this medium, one could pursue virtually any course at his own time. Therefore, for the programme to be successfully achieved, there is need for the employment of effective and efficient learning materials.

The use of a variety of learning materials to provide and/or improve access to good quality education for large number of learners wherever they may be is a right step towards achieving the goals of distance education in Nigeria.

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