

## THE ROLE OF EDUCATIONAL TECHNOLOGY IN THE INSTITUTION OF HIGHER LEARNING.

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### Abstract

*This paper examined the issue of the survival of educational technology in higher institutions of learning. It also presented some conceptualization of educational technology as a system approach to the solution of educational problems. The paper also analyzed the possible roles and applications of educational technology under the new policy on education. The factors militating against the proper use of educational technology in higher institutions of learning were also highlighted.*

### Introduction

The term educational technology as it is relatively new, is in its nature elusive; it means different things to different people. To some, it is the sum of the ways in which a social group provided with the material of their civilization. In other words, technology comes into play the moment man extends, improves, or hastens his natural ability making use of the natural sciences around him. Whether it is a stone, stick, iron, metal, animal he used, or made an innovation or invention from leaves, tree, etc., he has applied science and therefore it is in the doing and not about what is done. Technology thrives on practice and is progressive and dynamic.

Educational technology to others has a wider connotation, implying an attempt to rationalize the whole structure of education and training in terms of improved methods of allocating and using both human and physical resources. It carries a potent of mechanical features to be dreamed of and guarded against. Adewoyin (1991) defines educational technology as the application of scientific and other organized knowledge using relevant tools in the solution of problems as well as the improvement of society. Brickson (1985) describes technology as the total scientific economic and industrial development of the world. How do we then relate this view of technology to education? When educators

provide themselves with these technological devices to improve education or solve educational problems, we reach the realm of educational technology.

### **The Survival Of Educational Technology In Higher Institutions of Learning**

Educational technology covers the whole process of education and aims specifically at the improvement of the teaching-learning process.

According to John (1972) educational technology presents a typology and identifies three different educational technologies as:

⇒ Educational technology one is often referred to as "hardware" or high technology. This assumes that a technology of machine is intimately related to a technology of teaching. It is the application of physical science and engineering to the problems of education. Following this view therefore, educational technology is seen as a means of mechanizing or automating the teaching-learning process with certain advantages.

Technology one as stated above can be used to deal effectively with large groups of students especially in higher institutions of learning, increasing the power of teaching and reaching beyond the boundaries of the classroom, all without increasing the cost of education.

Educational technology two is the "software" which is also pointing at the importance of aids to teaching but is based on the application of the behavioural science to the problems of education. This is therefore the application of technology to the areas of curriculum, courses and instructional planning and development.

The survival of educational technology in higher institution involves the following approaches.

- ⇒ The identification of appropriate aims, goals and objectives.
- ⇒ The selection of relevant and suitable subject matter.
- ⇒ The choosing of effective and contrasting learning and teaching strategies, methodologies, activities and experiences.

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⇒ The evaluation of not only the success of the resulting learning outcomes but also the effectiveness of the very strategies employed.

In other words, educational technology two embraces the whole curriculum process for the survival in higher institutions of learning.

Yet, educational technology three is a combination of the hardware and the software approaches of the two technologies. It focuses mainly on the process as well as the products of teaching and learning. It is the application of system analysis concept to education. In this case, the major concerns are quality and relevance of the overall learning experience.

The survival of educational technology in higher institutions of learning should observe the three technologies, cover the transmission reception of knowledge and information, the purposeful shaping of behaviour, the means of enhancing the worthwhileness of the process.

Educational technology therefore includes all educational processes, strategies and activities designed to achieve excellence in education.

### **The Conceptualization of Educational Technology in Higher Institution of Learning as A System Approach to the Solution of Educational Problems**

According to Abdullahi, (2003) the present conception of educational technology has largely abandoned the narrowness of hardware concentrating on processes, which facilitate rational problem solving approaches indicative of a way of thinking skeptically and systematically about learning and teaching. The conceptual evolution in educational technology is without sacrificing its pragmatic usefulness in providing means towards educational ends. Therefore the conceptualization of educational technology as beyond the confines of hardware has made it more

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versatile and efficacious in the solution of educational problems even under a distressed economy.

As a system approach to the solution of any educational problem at a given time, educational technology can help in the solution of some pressing problems such as:

- ⇒ Poor and inadequate functioning of education. In this case educational technology can help through improvisation. Although a good educational technologist could use discarded cans, cardboards, strings and so on in the construction of inexpensive but effective teaching materials.
- ⇒ Inadequate and irrelevant curriculum educational technology can assist in the development of new curriculum contents as well as designs and establishment of flexible instructional strategies including programmed materials and modules.
- ⇒ Inadequate programmes and facilities for the training of teachers. Hence educational technology can assist by helping to develop appropriate competency based teacher education.
- ⇒ Shortage of adequately qualified teachers at all levels. In order to achieve this, there could be development of modules and audiotapes which could be reproduced and utilized extensively.
- ⇒ Inadequate equipment, materials and facilities. In order to achieve this educational technologist can assist in the development and production of inexpensive low technologies, also determination and development of alternative strategies.
- ⇒ Rote learning, that is use of different frames of references and the evocation of the various senses. Educational technology should help to take away rote learning.

#### **Role and Application of Educational Technology Under the New Policy on Education**

Under the new policy on education, the role and application of educational technology is a new strategy for the production of more functional and more technical oriented products. In other words, it has moved away from teacher to the learner. The role is directed towards meeting the needs of the learner and this therefore opens new prospects for educational technology and a challenge to educational aims.

According to Adedeji (1985) the role and application of educational technology under the new policy on education demands the appropriate organization of human and material resources, it also requires the preparation and effective utilization of appropriate and suitable educational materials. It necessitates the determination and appropriate utilization of relevant and feasible instructional media, and it makes imperative the application of knowledge about teaching and learning with the view to achieving effective and efficient development and communication of knowledge and skills. In conjunction, educational technology under the new policy on education must address itself with such issues as the types of learning that are facilitated by technology, the roles of the teacher and learners under the new policy on education involved the application of technology, appropriate procedures for material development as well as techniques for evaluating technology-mediated learning.

The application of educational technology calls for the new approaches, new techniques, new materials, new facilities, new administration, new resources and new system that will provide opportunities for such meaningful interactions among the various elements of education that will resolve the difficulties. It is important to note that the educational policy makers are aware of the place of educational technology in solving educational problems.

Education technology under the new policy on education plays very important roles for promotion and proper application in teaching and learning process.

- ⇒ One of the important roles is a creative artist for new combinations of media and new teaching strategies in order to achieve better teaching- learning process.
- ⇒ It provides an innovator who can effect radical changes in the educational enterprises.
- ⇒ Provision of a quality verifier to be able to check that what goes out to the student is always presentable, pertinent and effective.
- ⇒ Introduction of an editor who can check draft for their soundness and feasibility.
- ⇒ Supplying a concrete basis for conceptual thinking and hence reduce meaningless word responses of students.
- ⇒ To supply the necessary basis for developmental learning thereby making learning more permanent.
- ⇒ It develops continuity of thought that is especial to vocabulary development.
- ⇒ Offer a good system, analyst equipped with capabilities to achieving holistic designs, which are generally efficient in the teaching-learning process.

### **Factors That Militate Against The Proper Use Of Educational Technology In Higher Institutions Of Learning**

The ineffective utilization or application of educational technology Adedeji (1985) identified some of such militating factors with emphasis to the Nigeria universities and are still there up till today. Some of these factors are:

- ⇒ **Government Policy** In educational funding in this recent times especially in the universities has made it impossible to purchase major equipment items such as video, cameras, language laboratories, projectors, 16mm film processing equipment. Capital projects such as specialized educational technology buildings, resources and teaching centers, campus radio stations, and so on are often abandoned, and without government purchasing and financing the above, there will be no effective application of educational technology in the universities.

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- ⇒ **Infrastructural Constraints-** This can be seen in the areas of finance, space allocation and instructional resources which can certainly pose tremendous constraints to integrated development of educational technology in the higher institutions of learning. Lack of finance can surely constitute a source of inefficient educational technology programme operation. Space allocation constraints exist in the form of lack of production and storage space also for academic and administrative functions.

→ **Organizational Structure-** The organizational structure and bureaucratic authority patterns as well as lack of flexibility in the process of curriculum development constitute an impediment to educational technology. However, there is a problem in educational technology if the challenge to break through this impediment towards development and wide dissemination of new curriculum packages and strategies.

Since government policy has made it impossible to purchase major equipment for effective application of educational technology in the universities, there should be therefore organised pressure for those in authority to recognize and appreciate the importance of educational technology and work towards the availability of major equipment that will aid effective application.

Lack of finance should be dealt with in a more serious manner by making adequate financial allocations to both science and technology, and educational sectors. In the aspect of organizational structure, there should always be flexibility in the process of curriculum development to allow the basic and needed knowledge in order to facilitate good training of students.

### **Summary/Conclusion**

Our main problem on the role of educational technology especially in the higher institutions of learning seems to be with the fact that the growth of technology has not been given its due position or attention in our past and present government plans and programmes. There is always poor implementation attitude by the officials. And in most cases the government officials or the

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politicians allocate low percentage of the national budgets to science and educational sector, which barely goes round the institutions of learning. Also in some universities of technology in Nigeria, adequate attention and facilities are not allocated to the educational facility.

### Recommendation

- ⇒ The government should make adequate financial allocations to both science and technology, and educational sector.
- ⇒ Adequate and more facilities should be provided in higher institutions offering mainly educational technology.
- ⇒ The government should introduce a yearly scheme programme whereby best students graduating in our higher institutions have sponsors abroad to acquire technology skills on areas of education.
- ⇒ Technology should be placed at the appropriate positions where the basic and needed knowledge and training ought to be given.
- ⇒ Government should formulate policies that will encourage the growth of science and technology so that a level plain ground will be provided for investors.
- ⇒ There should be organized pressure for those in authority to recognize and appreciate the importance of adequately trained educational system.
- ⇒ There should be forum for publications and information relating to the role, prospects and possibilities of educational technology.
- ⇒ Individual participation and involvement in the provision of technology education should be encouraged.
- ⇒ Institutions should ensure adequate provision of facilities and infrastructure e.g. workshops, laboratories etc to enhance technology education.
- ⇒ Provision of highly trained and experienced technologist/technical staff is highly recommended.

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