

ENSURING EQUITABLE USE OF EDUCATIONAL TECHNOLOGY FOR JOB CREATION AND SUSTAINABLE DEVELOPMENT

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Abstract

Technology education for job creation is among the main tools for sustainable development. It is a skill-oriented educational programme that makes creativity in job training, the resultant effect bring about the development of input into output. Schools should provide technology devices and internet services as teaching aids for instruction for teaching and learning to be effective. Equitable use of internet services by the students, allow them to connect with sources of information across the globe.

Introduction

The level of efficiency displayed by any worker is a matter of the quality of training for occupational preparation. Training on the automated machines is essentials to business students, under training since the environment of business has become dynamic and sophisticated.

Oni (1999) said that “in order to succeed in an era of technological advancement, business students must be prepared for unexpected. They must be prepared to learn new ways of doing old things” it is rather painful to note that most higher institutions in our nation today do

not expose their students to these modern day technologies.

Ohakwe (1997) emphasized the fact that the way to avoid producing graduates who may parade certificates that cannot secure or guarantee a job in a fast automated business environment is to provide those skills and competencies which employers need. The improvement in technology has given rise to office automated machines like computer, word processor, electronic typewriter, fax machine, telephone, shredding machines, different types of photocopiers etc.

Rwuaan (1997) in his opinion orally that the possession of any technical skill should be accompanied by appropriate technology knowledge in order to facilitate effective and efficient application. Okwuosa (1990) in Rwuaan (1997) supported this fact by orally that for any business students (secretaries, accountants, marketers) to be efficient, she must know how, or familiarize herself with the changes in new technology which facilitate the smooth execution of her duties. He further stated that the possession of any technical skill should be accompanied by appropriate technological knowledge in order to facilitate effective and efficient application.

However, schools desiring or offering business education today must provide training in the use of technology machines. At the author indicated, to give such training to students, schools must have the modern equipments in which intend to give the instruction that will meet today's business need. Unlike other study areas; skills needed in operating modern business machines can never be acquired by merely studies about them from textbooks. Skills are rather acquired by doing. Schools should provide internet services and well equipped laboratories with technology machines. Examples of such machines are:

Computer/Internet services
 Word processor
 Typewriters (manual, electric, electronic)
 Adding machines (standard, full key board, ten key-manual and electric)

Accounting machines (dry process and wet process)
 Office Dictation machine
 Duplicating machines
 Mailing equipment (franking machine, postage machine, folding and inserting machine, sealing and opening machine).
 Microphones
 Date processing systems
 Communication devices (tele-type, telephone, mobile, telefax)
 Ear phone
 Air conditioning etc

The purpose of instructional technology is to promote the efficiency of education by improving the quality of teaching and learning. It incorporates those tools and materials that present, support and reinforces teaching. It can be seen as specific method of directing, controlling, managing and assessing solutions to real life problems. The essential purpose of instructional technology is to employ modern communication technology to help solve the educational problems emanating from the population boom the complexity of the information to be taught and learned, shortage of qualified teachers in certain subject's areas and the needs for individualized instruction. Davies (1978) orally noted about three technologies in education. These are hardware, software and system approach. Hardware approach means instructional technology as the process of teaching with concrete devices such as projector, television sets, radio sets, and cameras and so on. The hardware is the equipment or devices with which

materials are used. These devices are used in the educational setting to transmit, amplify, distribute, record and store information in the teaching/learning situation. The emphasis here is the use of equipment and it is a direct application of the physical science to solve educational problems.

The software approach is also known as the process approach. The software consists of textbooks or other printed materials, filmstrips, motion pictures, slides, video tapes, audio tapes and computer programmes. These store information to be presented by means of the hardware. The software approach emphasized the use of scientific principles of learning in the instructional process. The approach is closely associated with programmed instruction, the aim of which is to deliberately shape or modify the behaviour of learners in a predetermined direction through the application of learning theories, motivational reinforcement principles in the design and presentation of stimulus materials.

The system approach to instructional technology is a problem solving approach to instruction. It is more of a combination of both the hardware and the software approaches. The focus is on the systematic management of ideas, resources, (people, hardware and software facilities) so as to enhance and promote the effective and efficiency of the teaching/learning process. The techniques used in the systematic approach to instruction include planning for specific learning aims and objectives matching the learners to both the aims and the software.

Concept of Sustainable Development

One of the ways education can be used as a tool for sustainable development is through leadership and citizenship training. This training provide opportunity for citizens – especially young man, women to appreciate the essence of good citizenship and to develop a sense of expendability and leadership that will encourage sustenance, friendship and brotherhood. Development has been described as growth plus change which involves materials, mental, psychology, physical, institutional and organizational innovations (UNESCO 2000). The ultimate aim of sustainable development must be to bring about sustained improvement in the well being of the individual and bestow benefits to all citizens. Nigeria has been laying emphasis on job creation and mobilization of domestic resources, the transformation of the structure of rural production, the development of small-scale industries and the acquisition of technological and scientific skills. These objectives are development oriented and generally long ago stated, but well concerned, planned and directed policies and programmes are required for their realization (Umaru 1988). This means that development is about job creation in every aspect of national life. The citizen must be involved in the exploitation of the national, natural/mineral resources. Moreover, it is necessary to develop the individuals to be in a position to develop the society in which he lives.

As soon as the individuals are made to acquire specialized skills that will enable them to help develop the society,

then that society will become developed. This accounts for the difference between the develop countries and under developed nation. According to Alabi (1998), “the major factor responsible for the wide gap in the level of development between the so called developed and the developing nation is the level of development of pure and applied science in these nations. A country cannot be job creation if he cannot tap its natural resources and produce finished goods for its basic needs. Achievement of excellency is determined mainly by the quality of imput and the process which transform the inputs into output”. According to Aghenta (1988), Nigeria is a producer of predominately primary products: his minerals are not sufficiently tapped by the his citizens because of shortage of capital or as a result of primitive method of processing. Nigeria is externally indebted, importing expensive consumer and capital goods including agricultural products, Nigeria labour productivity is low where as the costs of production are very high. Nigeria is capital poor which affects investments in much needed capital goods, the personnel incomes of citizens are low while the masses are near subsistence living, hence their high propensity to spend rather than save and he has a large difference between required employment and available labour”.

Establishment of Internet Services and Information Technology in Schools or Faculties

When a school or faculty decides to implement educational information technology into curriculum, one of its overriding goals must be to create plans and policies for all members of the learning community to have equitable access and use. Appropriate funding and professional development represent the key means of supporting equitable access and use of technology to ensure technology literacy and to support meaningful learning for all students. The National Academy of Engineering (1995) emphasized the importance of technology in promoting educational opportunities for all students. The National Academy of Engineering (1995), stated “Technology deployed in education can help remove inequalities between the schools of the inner city and the suburbs, between urban cities and faculties. Technology can become the force that equalizes the educational opportunities of all students regardless of location, and social and economic circumstance.

Educational technology has the potential to provide equal learning opportunities in several ways. Grabe and Grabe (1996) noted that technology in the form of telecommunication allows access to people (through electronic mail and bulletin) access to interactive services through on-line discussion group, interactive conference and access to files (through on-line database, library holding files on the internet).

Teachers who promote meaningful engaged learning through authentic uses of technology are providing students with opportunities to interact with a wealth of resources, materials and data sets. When educational technology applications such as the internet, distance learning CD-ROM and video are used at the classroom level to help achieve challenging educational standard, they provide powerful alternatives for creating more effective learning environments and more productive learning opportunities.

As schools and faculties develop their technology plans, they need to emphasize equity. Refer to the initial issue "Developing a school or faculty technology plan". They can focus on three strategies to ensure all students have access to technology that supports meaningful learning.

- (1) Determine equipment and wiring needs, such as hardware, software, and a networking infrastructure that supports a technology – integrated curriculum.
- (2) Secure appropriate funding to cover initial costs, such as installation of a "backbone" as well as the ongoing costs of maintenance and technical assistance and
- (3) Provide professional development for educators so that technology is implemented in the classroom in meaningful ways and contributes to the attainment of high standards by all students.

In developing the first strategy, school and faculties need to implement a

base level of connectivity and infrastructure and ensure that it is upgradeable and expendable in terms of equipment and software. Part of this decision is a consideration of how the amount and types of education technology will be distributed among classroom or among schools.

Means, Olson and Singh (1995) noted the importance of both equality and quantity of access.

"Technology cannot become a useful support for students' work if they have access to it for only a few minutes, a week. Technology supported project – based instruction requires a high degree of access to the tools of technology and to communication system. Schools are faced with reality of a limited budget for equipment, tele-communication and software they must make hard choice about how to get the most of out of what they have".

The second strategy for determine equitable access and use of education technology is appropriate funding. Schools and faculties should enlist community support in developing funding strategies for education technology that recognize technology as an ongoing investment.

A final strategy in ensuring equitable use of education technology is ongoing professional development in technology and its applications. Teachers must have knowledge and experience with the vast range of educational technology and must learn strategies for using it effectively in the classroom (Hilliard, 1992). Rumirez and Bell (1994) note:

“Professional development must support teachers as they attempt to implement technology in the most efficient way possible as well as help them identify the most effective curricular models for their classrooms”.

Conclusion

As policies and procedures to ensure equitable use of education technology are implemented, administrators, teachers, policy makers, parents and community members must think ahead of how they will equip laboratories and maintenance.

Recommendation

It is strongly recommended that workshops/laboratories should be equipped with tools and modern machines. There should also be adequate funding of technology education programmes in all institution in Nigeria. Funding should also include educational information technology and production of learning materials in order to encourage mastery and competence in technological skills. Equitable access to information technology for all students and educators should be assured. Professional development should be encouraged to all personnels. School and faculty integrate education technology into the curriculum to create classroom applications that are learner-centred and that support high curriculum standards for all students.

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