THE PLACE OF INFORMATION AND COMMUNICATION TECHNOLOGY FOR EFFECTIVE TEACHING AND LEARNING IN NIGERIAN EDUCATIONAL INSTITUTIONS

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Abstract

This paper examines the place of Information and Communication Technology in effective teaching and learning in Nigerian Educational Institutions. Conceptual clarification of the term Information and Communication Technology was made and ICT in education was reviewed. The survey of literature revealed that ICT plays significant roles in effective teaching learning in Nigerian Educational Institutions through: enhancement of teaching skills and learning ability, providing access to remote learning resources, facilitates group/cluster teaching and learning, provision of educational opportunities to people with special needs etc. Based on the above, the paper concluded that ICT plays a significant role in effective teaching and learning in Nigerian Educational Institutions, this is because it solves the problems of receiving, storage and retrieval of vital data at any point in time if the ICT facilities are available. The paper suggested to the Nigerian government to look into the issues of funding of education in general and ICT in particular. Inadequate funding of education over the years may well be the hydra- headed impediment to the actualization of education goals and objectives. Access to information is deemed crucial to development during this era of a global economy supported by electronic communications. Similarly, the government in partnership with organizations should strive to equip the schools with adequate ICT facilities.

Keywords: Information and Communication Technology, Educational Institutions.

Introduction

The Nigerian educational institutions are in dire need of Information and Communication Technology, especially during this period of Information Technology revolution. This is because the utilization of Information and Communication Technology could play a vital role in teaching and learning. Technology is bound to rule our present and our future. This is an inescapable fact that we need to face. It has ruled over different facets of our life and influenced the way we live. Computers and the internet technology in particular have undoubtedly revolutionized the field of education. It plays an important yet fragile role in this field. The student-teacher dynamic has drastically changed since the introduction of technology based class structure. The instructor is no longer the king of the classroom but rather a middleman between information and student. Instead of a passive sponge soaking up knowledge, the student has now become an active informational architect, procuring, rearranging and displaying information.

In the recent era of Information and Communication Technology, we have seen a rapid change in the classrooms. The impact of technology is evident; computer has become the new classroom. Traditional classrooms became virtual ones, traditional teachers became virtual instructors. What was once an impossible task of teaching, a person in a distant and without actually going there became possible, thanks to the advent of computer and the internet. Traditional chalk board setting has now evolved into digital projectors, interactive board even, physical library to virtual library. Books that have once burdened us for their volume and weight can now be digitally squeezed into a handy storage device. Finding and retrieving of information became easier than ever. This paper attempts to examine the place of information and communication technology in effective teaching and learning in Nigerian Educational Institutions

Information and Communication Technology

Becta (2008) defined Information and Communications Technology (ICT) as technology that is used to process, store, transmit, communicate, create or exchange information. In other words, ICT is the computing and communication facilities in education. According to Vernon (2001), ICT is a collective term covering all those technologies, both hardware and software, dedicated to the capture, storage, and processing, transmission, and presentation of information. This indicates that the use of ICT in all spheres of human activities has changed the face of the earth. It is used in health delivery, engineering, industry, business, and agriculture, military, security, law, politics and governance, all aspects of arts, science and education among others. It is against this background Hawkridge, Jaworski and McMahon (1990) opined that computers are at the heart of the ICT revolution because they are fast information processing machines, configured to receive input in the form of information, systematically process the input and provide organized information that serve the needs of the user. It has the advantage of improving administrative efficiency and overall quality of the teaching and learning process. Lucy (1998) viewed Information Technology as an organized combination of people, hardware, communication networks and data resources that collects, transfers and

disseminates information in an organization, It could be deduced from the above that ICT is a technical system that receives, processes and stores data.

Information and Communication Technology (ICT) in Education

ICT has the advantage of improving overall quality of the teaching and learning process. Akinyemi (1988) stated that computers used in education are in the form of Computer Managed Instruction (CMI), Computer Supported Learning Aids (CSLA), Computer Based Education (CBE) and the Computer Assisted Instruction (CAI). He further emphasized that in computer managed instruction, the computer is used for data processing which facilitates decision making for effective administration, classroom management and individual student management, generation, marking, and analyzing tests, grading, diagnosis and the monitoring of the learners progress, improves efficiency and productivity of information, performs intensive tasks, carries out repetitive tasks and stores large volumes of data and information. Nwidum (2006) listed ICT in education as motion picture or film, film strip, slide projection, overhead transparency, teletext and video text, the reprographic media are photography, photocopying, scanning and faxing microchips, microfilms and microfiche, voice mail, voice processing, the computer, the internet; multimedia systems are for example computer-based training (CBT), Computer Disc Read Only Memory (CD-ROM), Compact Disc Interactive (CD-I). Digital Video Interactive (DVI), Interactive Processing Information Services.

The Place of Information and Communication Technology in Effective Teaching and Learning in Nigerian Educational Institutions

ICT plays a vital role in effective teaching and learning because it serves as a potentially powerful tool for extending educational opportunities, both formal and non-formal, to previously underserved constituencies scattered and rural populations, groups traditionally excluded from education due to cultural or social reasons such as ethnic minorities, girls and women, persons with disabilities, and the elderly, as well as all others who for reasons of cost or because of time constraints are unable to enroll on campus. The ICT plays significant roles in Nigerian Educational Institutions. These include:

Enhancement of teaching skills and learning ability: With the help of ICT now it is easy to provide audio visual education. The learning resources are being widened. Now with this vivid and vast technique as part of the ICT curriculum, learners are encouraged to regard computers as tools to be used in all aspects of their studies. In particular, they need to make use of the new multimedia technologies to communicate ideas, describe projects, and order information in their work.

Anytime, anywhere: ICT has provided immediacy to education. Now in the year of computers and web networks the pace of imparting knowledge is very fast and one can be educated anywhere at any time. One defining feature of ICTs is their ability to transcend time and space. ICTs make possible a synchronous learning, or learning characterized by time lag between the delivery of instruction and its reception by learners. Online course materials, for example, may be accessed 24 hours a day, 7 days a week. IT-based educational delivery (e.g., educational programming broadcast over radio or television) also dispenses with the need

for all learners and the instructor to be in one physical location. Additionally, certain types of ICTs, such as teleconferencing technologies, enable instruction to be received simultaneously by multiple geographically dispersed learners (i.e., synchronous learning).

Access to remote learning resources: Educational material at all levels from pre-school to postdoctoral is available from websites. Teachers and learners no longer have to rely solely on printed books and other materials in physical media housed in libraries (and available in limited quantities) for their educational needs. With the Internet and the World Wide Web, a wealth of learning materials in almost every subject and in a variety of media can now be accessed from anywhere at any time of the day and by an unlimited number of people. This is particularly significant for many schools in developing countries, and even some in developed countries, that have limited and outdated library resources. ITs also facilitate access to resource persons, mentors, experts, researchers, professionals, business leaders, and peers all over the world.

Group/Cluster Teaching and Learning: Now ICT has made it easy to study as well as teach in groups or in clusters. With online we can be united together to do the desired task. Efficient postal systems, the telephone (fixed and mobile), and various recording and playback systems based on computer technology all have a part to play in educational broadcasting in the new millennium. The Internet and its Websites are now familiar to some students in Nigeria and among educational elites elsewhere, but it remains of little significance to very many more, which lack the most basic means for subsistence. Audio-Visual Education, planning, preparation, and use of devices and materials that involve sight, sound, or both, for educational purposes. Among the devices used are still and motion pictures, filmstrips, television, transparencies, audiotapes, records, teaching machines, computers, and videodiscs. The growth of audiovisual education has reflected developments in both technology and learning theory.

Operational and Experimental Services: Internets support thousands of different kinds of operational and experimental services, one of which is online library. We can get plenty of data on this online library. As part of the ICT curriculum, learners are encouraged to regard computers as tools to be used in all aspects of their studies. In particular, they need to make use of the new multimedia technologies to communicate ideas, describe projects, and order information in their work. This requires them to select the medium best suited to conveying their message, to structure information in a hierarchical manner, and to link together information to produce a multidimensional document.

Perception, Memory and Concept Formation: All learning is based on perception, the process by which the senses gain information from the environment. The higher processes of memory and concept formation cannot occur without prior perception. People can attend to only a limited amount of information at a time; their selection and perception of information is influenced by past experiences. It was found that, other conditions being equal, more information is taken in if it is received simultaneously in two modalities (vision and hearing, for example) rather than in a single modality. Furthermore, learning is enhanced when material is organized and that organization is evident to the student. These

findings suggest the value of audio-visuals in the educational process. They can facilitate perception of the most important features, can be carefully organized, and can require the student to use more than one modality.

Provision of Educational Opportunities to People with Special Needs: Information Technology has brought drastic changes in the life of disabled children. ICT provides various software and technique to educate these poor peoples. Unless provided early with special training, people profoundly deaf from birth are incapable of learning to speak. Deafness from birth causes severe sensory deprivation, which can seriously affect a person's intellectual capacity or ability to learn. A child who sustains a hearing loss early in life may lack the language stimulation experienced by children who can hear. The critical period for neurological plasticity is up to age seven. Failure of acoustic sensory input during this period results in failure of formation of synaptic connections and, possibly, an irremediable situation for the child. A delay in learning language may cause a deaf child's academic progress to be slower than that of hearing children. The academic lag tends to be cumulative, so that a deaf adolescent may be four or more academic years behind his or her hearing peers. Deaf children who receive early language stimulation through sign language, however, generally achieve academically alongside their hearing peers.

Educational Quality Assurance: The integration of information technology in teaching is a central matter in ensuring quality in the educational system. There are two equally important reasons for integrating information technology in teaching; pupils must become familiar with the use of information technology, since all jobs in the society of the future will be dependent on it, and information technology must be used in teaching in order to improve its quality and make it more effective.

Conclusion

From the above, we can conclude that ICT plays a significant role in effective teaching and learning in Nigerian Educational Institutions, this is because it solves the problems of receiving, storage and retrieval of vital data at any point in time if the ICT facilities are available.

Recommendation

The government should look into the issues of funding of education in general and ICT in particular. Inadequate funding of education over the years may well be the hydra- headed impediment to the actualization of education goals and objectives. Access to information is deemed crucial to development during this era of a global economy supported by electronic communications. Similarly, the government in partnership with organizations should strive to equip the schools with adequate ICT facilities.

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