

INFORMATION AND COMMUNICATION TECHNOLOGY EDUCATION AND MANPOWER DEVELOPMENT IN NIGERIA

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Abstract

Information and communication technology (ICT) shows human ingenuity and ability to record, access, manipulate, communicate and transmit information. In Nigeria and other developing countries of the world, the institutions responsible for the development of responsive and strong manpower, that is, the educational sector lags, behind other sectors in the adoption and utilization of ICT. This paper suggests that the educational sector should explore the potentials of ICT innovations. It recommends the importance of refraining teachers and provision of enabling environment in our educational institutions if this objective must be realized. According to this paper, the first step towards achieving computer literacy for manpower developers is the provision of computer rooms in schools and faculties of our educational institutions and making compulsory for the manpower developers-the teachers to be computer literate.

Introduction

Manpower development in the 21st century and beyond, demands that teachers should be capable of effectively handling ICT for the purpose of developing students to radically obtain and manipulate information for their education and development. Presently the use of ICT to produce, manipulate, store and disseminate information has profound effects on our modern society all over the world and will continue to have and be sought after by those who have need for it. ICT is made possible by the combination of computer and telecommunication accessories.

In order to communicate effectively the curriculum materials of our educational institutions for the required manpower development, these materials must reach the learner in the form, manner and period that is receivable to the learner. ICT provide activities which involve the creation, manipulation, dissemination and retrieval of information that serve the best interest of manpower development.

ICT revolution poses a number of challenges to manpower developers. These include among others, preparing manpower developers to cope with the training of learners living in a world rapidly endowed with information, and preparing an enabling environment in our institutions to adopt and utilize ICT to cope with teaching and learning.

Obviously ICT and its consequent information explosion is changing the traditional manpower development processes which include the traditional classroom instructional materials, the methodologies, strategies, techniques of instruction and classroom management and administration. Integrating ICT into the manpower development in this way will mean providing new opportunities for teaching and learning.

Meaning of Information and Communication Technology (ICT)

The two important factors in the acquisition of knowledge are information and communication. According to Longman Dictionary of Contemporary English (1978), information is defined as facts or details that tell you something about a situation, person or events, while communication is the process of exchanging information. Communication can also be defined as ways of sending information especially radio, telephone or computers. Technology on the other hand is the use of scientific and industrial methods for the improvement of production.

The International Dictionary of Management (1990), defines ICT as an umbrella term for acquiring, processing, storing and dissemination of information either in textual, vocal, numerical, graphical etc form, using computer and telecommunication. Here the relevance of telecommunication which include radio, telephone, television and of course computer cannot be underestimated. David (1990) believes that ICT is a relatively new field that combines the technology of the computer with that of communication. It is the gathering, recording, processing, storage and dissemination of information. This means that ICT gathers information, processes the information, stores the information and can easily retrieve the information for further use. It is also used for communication and dissemination of information.

Computer occupies a vital position in the Information and Communication Technology (ICT). So, as

computer and telecommunication go hand in hand in ICT, the origin can be traced to the time computer came into existence. The first ever commercial computer was evolved in 1940s after many years of research. It was a huge machine which occupied large space and consumed lots of energy. It was very expensive to build and of course maintain. The development of transistor and introduction of integrated circuit IC helped in reducing the size and increase the efficiency of the computer.

ICT came into being in late 1970s. This refers to the modern electronic technology used to handle information. It involves the computing and telecommunication technologies with part of consumer electronics and broadcasting. According to Gilbert in Etesike (2003), the telecommunication field is perhaps the most rapidly evolving of all disciplines. In the past decade, the use of micro processors, fiber optics and satellite has dramatically changed the structure of the telecommunication industry, the product offering for vendors and the facilities provided by common carriers.

The Relevance of ICT in AH Sectors of the Society

With rapid global development in all aspects of human endeavours, the importance of information and communication technology ICT is very useful in all aspects of human undertaking. No individual or organisation gets information in isolation. Such information must be communicated to them through interaction with others in the environment either human or material, (Etesike, 2003). With easy flow of information, society would not have difficulties in educating its citizens, in business, industry, leisure, travel and communication, etc.

The use of ICT to produce, manipulate, store and disseminate information is having profound effects on modern society all over the world and will continue to have and be sought after by those who have need for it. For any endeavour either in industry, business or education to thrive, it must be able to use the latest in such area as provided by ICT network.

With telephone, internet, e-mail etc, one can send or receive information from any part of the world in a matter of minutes or seconds. ICT makes it possible to transact bank business from one town or country to another in a twinkle of an eye. Hence ICT is very vital especially in education where information and communication is a vital tool through which reasonable and functional education is transmitted and acquired. Education is the acquisition of knowledge and there is the slogan which says that "knowledge is power". So, for us to have power, we must have knowledge, and we can only have knowledge when reasonable and sensible information is communicated to us. ICT is the means through which we can achieve this; hence ICT is very important in our manpower development.

ICT in Education Industry in Nigeria

Most developing countries of the world including Nigeria have fallen behind in their quality education delivery because of their inability to utilize information and communication technology (ICT) resources. Technological advancements all over the world in ICT have made teaching and learning easier. According to Akinrotahun (2002) in Ukwungwu (2003), today's learning is made possible through e-mail, internet, world wide web (WWW) etc. Through these media of communication, information is sought and used where necessary and at any convenient time. Some tertiary institutions in developing nations have adopted ICT education and utilization. An example is the University of Botswana in Botswana. University of Botswana embarked on an experiment intended to completely infuse ICT into the instructor-learner interface. By this they intend to provide a framework for integrating ICT into teaching learning and research. The original motivation (Charakupa, 2002) came mainly from decision to equip each faculty in the University with computer laboratory. This provision arose from the senate's decision that every graduating student must be computer literate. Indications are that the experiment has taken off and expectations are high that the experiment will succeed.

In Nigeria, the education sector lags far behind other sectors in ICT adoption and utilization. For example, in banking, healthcare centres, industries, airlines business, offices etc computers are used to ensure effectiveness and efficiency in transactions, Okoroanyanwu (1992), observed that many Nigerian banks have embraced (ICT) as it is increasingly found to be useful in their daily activities such as information retrieval, financial accounting and distant communication and these provide efficient services to their customers. But in our education sector, things are different. In our institutions of learning, it is strange to find computers in the classrooms. Computers are tied to computer laboratories and limited to computer studies only. This may be the reason why Oyedele and Cifrat (2000) advocate taking advantage of computer skills without knowing the technology that make up the computer. It is only with this philosophy that the pedagogical potentialities of computer will be explored. The National Information Technology Development Agency (NITDA) is the country's apex ICT body and has to be involved if ICT reform has to be tackled on

a national scale. Edo State government recently scored a first in ICT centre in Benin City. This centre has several units of personal computers with full multimedia training facility within a most conducive learning environment.

The application of ICT in our education delivery is still very scanty. Bichi (1994) identified six ways computer can be of assistance in schools. These include:

- Word Processing.
- School administration.
- Data storage and retrieval.
- Control of other devices.
- Computer assisted instruction (C.A.I.).
- Computer Managed Instruction(C.M.I).

With rapid development in ICT, we have Smart classrooms and on-line courses which make education delivery very convenient. According to Gusen (2000), the effect of ICT in the society is so great that educators cannot avoid using it for teaching and learning and management of our institutions of learning.

The introduction of ICT into the curriculum of our institutions of learning will enhance teaching and learning and therefore improve manpower development. This means introducing ICT across the curriculum activities without necessarily removing any topic in the syllabuses.

The availability of teachers who are conversant with ICT will enhance the integration of ICT into the curriculum. Those teachers who are conversant with ICT are trained teachers with proficiency in.

- (a) Computer Operation.
- (b) Programme Production.
- (c) Developing suitable soft wares.

Therefore the major tasks facing our educational institutions today include among other things, investing in human capital in order to increase the ability to absorb and use ICT for manpower development.

Studies by Harbor-Peters (2001) and Akudolu (2002) revealed that over 95% of mathematics teachers in Nigeria are not computer literate. Also a study by Nwosu (2003) shows that most STM teachers, lacked ICT expertise and could not use computer as teaching aids. It is clear therefore that these teachers are not conversant with ICT, hence, they would find it extremely difficult to deliver the curriculum materials effectively to the 21st century Nigerian students.

Many countries have made consistent effort to promote ICT teachers/earnings empowerment programmes (Rahman, 2002; Charakupa, 2003; Salau, 2003, etc). The main aim of such programmes is to make ICT available to teachers. According to Salau (2003), there is acute shortage of ICT technicians and personnel all over the world. He opines that nations that drag their feet on ICT manpower and skill development run the risk of increasing the already existing gap between ICT skills demand and supply.

The inability of developing countries including Nigeria to utilize ICT resources has made it difficult for these countries to deliver functional education to their citizens. The instructional processes in education are being radically changed by ICT. According to Charakupa (2003), teaching and learning in an on-line environment is different from traditional classroom environment. On-line education allows for increased flexibility in scheduling and location matters. It also enhances intensive interaction between the learners and the learning materials. It is only teachers who are trained in ICT that can operate an on-line course.

There should be concerted efforts by the government and educational institutions at all levels toward compulsory acquisition of ICT skills by teachers. It is only when this is achieved that we can produce ICT skilled manpower on a scale that can move forward our education process and of course our nation. The National Commission for Colleges of Education (NCCE) has taken the bull by the horns. It issued a circular recently to the effect that computer literacy is now compulsory for academic staff in Colleges of Education in Nigeria. The circular provided for one year moratorium within which old staff must update their computer operation skills. This circular has challenged managements of all colleges of education in Nigeria to initiate computer literacy programmes like University of Botswana in Botswana. NCCE has set the ball rolling and it is now in the courts of these college managements to break the jinx and establish the first ICT compliant institutions in Nigeria.

Recommendations

Manpower developers in developing countries including Nigeria need to be computer literate. This is

because the widespread use of ICT is fast changing the world dramatically in terms of the ways people think, learn, work, socialize and of course conduct their business.

To make this computer literacy a reality, so that, ICT can be fully adopted and utilized, the following recommendations are proffered.

- (a) Key institutional personnel should be trained in the use of information technology for instructional purposes.
- (b) Government should develop an information technology policy and strategy.
- (c) All teaching staff should be trained in the use of IT for instructional purposes.
- (d) Information technology should be introduced into the relevant aspects of teaching and learning.
- (e) Computers should be installed in students and staff laboratories.
- (f) Each teaching staff should be supplied with one computer each.
- (g) Issues of sustainability of this programme through collaboration with other institutions should be properly addressed.

Conclusion

This paper highlighted a proposal for a reform in our education system which is involved in training of manpower to create avenue for awareness. This implies providing new opportunities for teaching, learning and research without necessarily changing the content through introduction of ICT. The reform requires new teachers and instructional roles, different environment, work pattern and practices. Any institution that aspires to produce manpower that is responsive to the demand of the present time cannot avoid these new ideas,

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