QUALITY MANPOWER SKILLS DEVELOPMENT IN INFORMATION AND COMMUNICATION TECHNOLOGY BASED EDUCATION: POLICY IMPLICATIONS

FOR TERTIARY INSTITUTIONS

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Abstract

ICT skill development is a variant of manpower development and education as well as training is the backbone of manpower development. While improvements are required at all levels of national education and training systems, the importance of training and re-training of higher education students, the nation’s powerhouse for technological advancement, in ICT skills development programmes, cannot be over emphasized. This paper therefore, attempts to discuss some of these skills as well as examine the modes of training.

Introduction

Information and Communication Technology (ICT) refers to the use of electronic equipment (especially computers) to process, store and disseminate information to, and over a wide audience (Sanni & Osumbemiro, 2002). ICT based education includes the use of ICT resources including the use of computer based systems and all types of information and technology software and hardware in the educational process.

Manpower development on the other hand, according to Obi (2003) is the production of human capital and its effective investment in the development of an economy. Development in this regard is the human resource development, which is the process of increasing the knowledge, the skills and capacities of all the people in a society.

ICT therefore being a means of information, dissemination, especially to a wide audience, it becomes obvious what roles it can play in manpower development.

Manpower development is a major component of socio-economic development and education is the backbone (World Bank, 2002). In this era of technology revolution, where the global information society has initiated a shift of emphasis from the natural resources - based economic development model to that of knowledge - based resources development in creating national wealth, the need for our tertiary institution students to develop ICT skills cannot be overemphasized.

The World Bank Report (2002) has shown that there exists a correlation between Information Technology (IT) and national prosperity. It also pointed out that national development is an index of the quality of manpower development of a nation. Hence, the role of ICT use and adequate skills development in quality manpower skill development in Nigeria cannot be in question.

The country therefore, needs suitable manpower to join the rest of the world to participate in the global high-tech village. This paper is an attempt to examine some of the ICT development skills our university students need to develop in order to face the challenges of the information age.

ICT Skills Development in the Information Age

World Bank Report (2002) states that Nigerian youths and graduates lack the basic ICT skills development demands for employment and necessary growth in modern ICT oriented society. However, there are certain areas of skill demand profile in IT society which Nigerian youths can take advantage of with effective planning and training programmes and cash into the global market.

Research has shown that Internet skills followed by programming skills top the skills demand profile in ICT societies (Mirilla, 2000). Other ICT basic building skills include skills in general computing which includes knowledge of computer, application of computer, appreciation of computer and communication in computer.

Internet Skills

World Bank (2002) points out that the Internet is a powerful tool for improving the efficiency and quality of a wide range of public services that are important for poverty
reduction, especially education and health. It is a facility that is skill-oriented. The Internet skills involve:

(i) Search Technique Skills: This is the ability to identify the portal sites that can be very useful for initial research. For example, Web links like http://www.sheffcol.ac.uk/links/ provides almost 500 educationally useful, annotated, categorized and searchable links.

(ii) Downloading Skills: This is the ability to assemble the material needed. They can view a page, highlight text or pictures and copy them into a word-processor. Or they can save text, pictures or a whole web page as a file on disk. In this way they can treat web-pages as raw data (to mould) for particular purpose.

(iii) Caching Skill: The ability to store web-files for later reuse so that they can be sure the pages are there. This is not a straightforward skill. Other skills are skills in producing personal website and designing skills.

Programming Skill

Another important ICT skill our youths should be conversant with is programming skill. Programming is the act of communicating with a computer in a language it can understand. The computer's high-level language includes BASIC, LOGO, PASCAL etc. Nigerian graduates should develop and be able to write simple programmes using these levels of computer language. They should acquaint themselves with programming skills and be able to understand standard statements in BASIC, LOGO etc programming and their uses and be conversant with skills in structured programming. This will not only enhance their opportunities for securing jobs but also improve their skill competitiveness,

Computer Skills

This involves skills necessary for proper management and utilization of computer. It includes the knowledge of computer, application of computer, appreciation of computer and communication in computer (Olagunju, 2003). This also implies the acquisition of rudimentary word processing skills such as text writing and editing.

If our youths and graduates, especially the graduates of higher institutions should acquaint themselves with the above ICT skills development, they will not only improve on the acquisition of knowledge and skills in the larger society for creativity and innovation which globalization and knowledgeable society demand but also will improve our scientific, technological and educational platforms.

The Need for Information and Communication Technology in Nigerian Literate Graduates

The tertiary institutions are expected to produce high-level manpower resources for engineering national development. It is on the tertiary institutions that we depend for the production of skilled manpower that should move our country into the comity of technologically advanced nations. According to Mkpa, (2003) Nigeria has nothing to show over fifty years after the first university was established in Nigeria. Have we been able to manufacture a made in Nigeria motor cycle engine with all the professors of engineering, many of whom made first class honours in Engineering? Are Nigerians able to service or maintain our refineries such that we cease to drain our foreign exchange earnings to foreign lands to pay foreign experts? Can Nigerian civil engineers in construction, compare with foreign construction companies in efficiency, creativity and precision operation? To what extent can we depend on our Nigerian made weapons for our defense purposes? All these questions are issues that point out the low technological skills among Nigerian higher institution graduates.

Furthermore, Nigeria has been identified as one of the poorest countries in the world with a high rate of youths’ unemployment. One basic factor according to World Bank Report (2000) is the low level of ICT skills development among the Nigeria graduates in the modern ICT oriented society. Nigeria ranks among countries with low level of ICT adoptions as follows:- fixed line and mobile telephones per 1000 people - 5; personal computers per 1000 - 6.6; internet users per 1000 - 200 as compared to South Africa with the following figures 304, 61.8 and 2,400 respectively. This report is in agreement with Olagunju (2003) who studied tertiary science education students' level of awareness and utilization of Information and Communication Technology in three tertiary institutions.
In Oyo state and reported a mean score of 2.08, which is lower than the criteria weighted mean score (2001) also confirms this when he asserted that the percentage of our undergraduates computer literate must be less than two percent. Nigerian youths and graduates cannot afford left behind in this high-tech race.

Information age is essentially driven by knowledge within the context of ICT, if the development of skills in ICT is ignored, there will be "increased divide between information - haves and have-nots" (Osinibi, 2000). Information increases knowledge, and knowledge is power. Therefore our youths should be empowered to be able to move the nation forward. The whole world seem to be educated to a global hamlet, no country desires to be mapped out of the relevant hamlet. Information and communication technology is therefore indispensable for any country that must belong to the global hamlet.

According to Rahman (2002), a large number of developing counties have lagged behind in ICT due to their inability to develop skills in the use of ICT resources. These resources include computer-based systems. In Nigeria as in other developing counties of the world, the populace must be educated in the use of the computer to be able to communicate and relate effectively with the rest of the world.

More importantly, Isonu (2003) pointed out that ICT affords increased employment and educational opportunities for young people. It promotes opportunity for life long learning, learning while working, distance education, skill for employment and gives the Nigerian youth opportunity to compete on a level playing ground with peers in the global village.

**Strategies for Achieving Quality Manpower Development in Basic ICT Skills Development Focus**

A major strategy of achieving this is through Human Capacity Buildings, since ICT is the engine for sustainable development. Human Capacity Building involves both Education and Training. Training and re-training programmes are very vital for acquiring better skills to enhance productivity especially in this era of "life-long learning". It is a well-known fact that scarcity of qualified human capital at all levels-policy, managerial and technical is one of the main obstacles to the sustainable growth and development of developing nations. ICT industry is a very dynamic one hence the attendant need for continuous and aggressive training programmes to catch up, with the frontiers of knowledge, creativity and innovation to ensure national pride and global relevance.

The central element of Capacity Building Strategy is to strengthen the national capacities to respond to training and other capacity buildings needs. This can be achieved through:

1. Improved public policy formulation strategies.
2. Promoting train-the-trainers courses.
3. Development and dissemination of manuals and managerial tools.
4. Conducting of strategic national capacity building development conferences/workshops.

**Policy Implications for Quality Manpower Development in the Information Age**

Since the vision statement of the National Information Technology Policy is "to make Nigeria an IT capable country in Africa and a key player in the information society by the year 2005, using IT as the engine for sustainable development and global competitiveness" (FRN, 2001), the following policy implications for manpower development in the information age should be considered:

1. Policy makers should endeavour to relate our educational policy more effectively to employment opportunities and trained manpower needs. These are essential components to effective development strategies (USAID, 2001).
2. The use of information and communications technology in resource generation planning, employment matching and delivery of services should be obvious while making educational policies.
3. Factories should be set up in Nigeria where computers and allied products can be manufactured and not simply assembled.
4. A minimum standards policy must be set for any university to be set up. The standard must include an equipped computer laboratory with at least one hundred computers with a V-sat Internet connection and a video conferencing laboratory.
(5) Serious concern through enough budgetary allocation should be shown by government of Nigeria since infusion of ICT into our educational programme holds a number of advantages to the people notwithstanding the high cost. This will facilitate acquisition of some basic gadgets and necessary linkages.

**Conclusion**

The need for ICT skills development among our university students are several and desirable. Apart from equipping them with the necessary skills for increased opportunities for employment and lifelong learning, it also serves as the national powerhouse for sustainable development and global competitiveness among nations.

**Recommendations**

For quality manpower development in ICT modern oriented society the following recommendations are made:

1. Schools should be equipped with computers and necessary instructional packages for teaching and learning.
2. Introduction of computer studies and networking should be made compulsory in all departments of our tertiary institutions.
3. More ICT teachers should be provided.
4. Concerted effort should be made to link all tertiary institutions/facilities/departments to the global telecommunications network (Internet).

**References**


