The Use of Information and Communication Technology (ICT) in Vocational Education for Sustainable Development

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Abstract
This paper stresses the use of ICT in vocational education for sustainable development. The paper attempts to explain the concept of ICT, the concept of vocational education, ICT in Home Economics education, ICT in Agricultural education, ICT in Business education. Finally, the paper reviews the benefits of ICT to vocational education, conclusion and it was recommended that (1) students should be encouraged to have interest in vocational / technical education as it can afford them the opportunity to be self employed (2) government should provide necessary facilities, equipment for vocational / technical education and employ experts to handle them.

Introduction

Concept of Information & Communication Technology (ICT)
Information and Communication Technology (ICT) for short has become a household term, in recent years. ICT are vast web of high digital communication networks delivering information, education and entertainment services to schools, homes, offices, markets, roads and so on.

According to Abagai (2004), ICT is the technology that facilitates communication procession and transmission of information by electronic means. Kent, (2004) stated that ICT is the computing and communication facilities and features that variously support teaching, learning and a range of activities in education including vocational-education. Ali (2004) gave the simplest definition of ICT as the physical structure of network of computer base system (hardware, software, and media) for purposes of organizing, processing, communicating, accessing, presenting, storing, retrieving & simplifying information. Curtain (2001) on the other hand defined ICT as...
a set of activities that is facilitated by electronic means, the capturing storage, processing, transmission and delay of information.

The Issue of employment and sustainable development is a major concern of the government. The demand and search for white – collar job by graduate youths from our educational institutions has been on the increase. Menial jobs like ‘Okada’ riding, car/motor-cycle wash, waste collection, road cleaning, are now taken up as jobs by graduates.

Nigeria require functional education that can provide job for the youths and make them self reliant. Vocational education has never been popular in Nigeria. According to Akoroda (2004), Nigerian parents asked for the establishment of secondary grammar schools and vehemently opposed vocational and technical school because they considered secondary grammar schools as the only route to professional and material success.

However, the die is cast: The federal government having realized the importance of vocational/Technical Education as a way of solving the problem of unemployment designed a curriculum that will create employment for the youths for sustainable development. The 6-3-3-4 education system encourages vocational/Technical education. Akoroda (2004) added that emphasis on vocational and technical education instruction in our institutions of learning will enable individual students to become familiar with the values of a work oriented society, and to integrate such value into their lives in such a way that work becomes possible, meaningful and satisfying to each individual.

Concept of Vocational Education

Vocational education in Nigeria is traceable to traditional apprenticeship system that involved impacting crafts and trades to members of the family, through active participation on skill acquisition (Akoroda, 2002) To this, he stated that notable Africans like Dr. Nnamdi Azikiwe and Professor Eyo Ita, expressed dissatisfaction with the type of education given to the Africans in the colonel background and advocated for cultural reforms for the Africans. The dawn of a contemporary society witnessed the establishment of Vocational and Technical schools in Nigeria.

Vocational and Technical Education according to Ihimeken and Oseloka (1997) is that aspect of education which is mainly concerned with the preparation of individuals for skilled performance on task. Okorie & Ezeji (1988) defined Vocational Education as education designed to prepare skilled workers for industry, agriculture, commerce and so on which is usually provided at the upper secondary level. They also defined vocational education in terms of.

1. The training designed to advance an individual general proficiency especially in relation to his present or future occupations.
2. Training or retraining which is given in schools or classes under public supervision & control, and.
3. Provision of systematic learning experience which are designed to fit individual for gainful employment in recognized occupations.

The National policy on Education (2004) defined Vocational and Technical Education as that aspect of education that leads to the acquisition of practical and
applied skills and basic scientific knowledge. According to Tibi, (2004) Vocational education areas include: Agricultural Education, Business and Office Education, Fine and Applied Arts Education, Home Economics Education, Health Occupation Education. Initially these courses were taught to students to inculcate in them certain knowledge and skill that will prepare them for stereotype job placement (Uko-Aviomoh and Salami, 2007). Today, the economic trend in the country has brought a new wave. The level of poverty and high level of unemployment experienced by youths on completion of their education is a major challenge to the federal government hence the need to step up vocational training that will prepare individuals for vocational and technical occupation requiring technological knowledge and skill in job operation as planning control maintenance, testing and production. The role of Vocational and Technical Education as stated by Akoroda, (2002) includes.

(a) Promoting dignity of labour by entrenching works as the goal of education and explains the relativity of general education and vocational education.
(b) Promoting acquisition of skillful experience that is instrumental for job mobility.
(c) Allowing for the intelligent use of product of technology and development of better entrepreneurial skills.
(d) It is innovative and influences dignity of labour, dedication and consciousness of duty.
(e) It reduces drop-out syndrome in the school system by provision of training opportunities.
(f) It stimulates technological and industrial development that are competent and economically sensitive.

The need for ICT in vocational Education for sustainable development is a welcome idea. More than any other revolution, ICT via internet revolution is all spread. It pervades all aspect of people life – Agriculture, Business, Education, and Medicine and so on. Okwuanaso (2004) added that the internet is the global information pool as it links and allows community to communicate over any distance to access any information from anywhere in the world, thereby turning the world into a global village. ICT has played a critical role to sustain development. It is used to improve institution information management, cooperate institutions and their organization to facilitate integration, to promote trade, financial cooperation, agricultural development, educational, research, environmental protection and vocational education inclusive (Utubuaku, 2008).

Consequently, Osiakwan (2002) stated that information and communication technology is a major tool for sustainable development and it is evident in the availability of educational resources, agricultural production, health delivery, good governance and economic emancipation.

The vocational education teacher can take the advantage of ICT to expose students to new skills and practical demonstrations of some difficult concepts for better understanding. Vocational subjects involve a lot of practical activities that require implementation (Oladokun, 2004).

**ICT in Vocational Home Economics Education**
Home Economics education is a dynamic course. It responds to changes in the environment. According to Olaitan and Agusiobo (1981), Home Economics education is seen as education for living, the study of everything that involves or relates to the home and family consequently, Ukpore (1983) identified the objectives of Home Economics education as:

1. To strengthen family life through personal, family and community living.
2. To prepare for employment related to Home Economics.

Unomah (2005) added that Home Economics education is expected to help youths assume their roles in their environment, in areas of personal growth, family life, vocational preparation and community involvement. Home Economics education as stated by Ovute (2005) can help individuals (male and female) acquire basic skills needed for gainful employment and family living.

Home Economics programmes according to Anyakoha (2008) include food and nutrition, child development, clothing and textiles, housing and home furnishing related arts, home management and family relationship. The mission of Home Economics in the globalized era is to upgrade the information, attitude and skills transferred to students through careful selection of relevant ideas through ICT (Uko-Avionoh, 2007) for sustainable development.

Home Economists can share knowledge across borders and obtain needed information for skill acquisition and employment for sustainable development through food and nutrition, clothing and textile for the purpose of this research. Food and nutrition, could be learnt through ICT via internet, cable news, television, compact disc, newspaper, magazines (Awake, 2002) skills that could be learnt include; new products developed in the food industry and new recipes for the family, current trends in nutrition education, current inventions in kitchen equipment, kitchen designs and furnishing, current innovations in serving styles, current developments in food eating environment, table cloth displays, flower arrangements, demonstration of different food preparation techniques, management of different ailments through nutrition and so on (Uko-Avionoh, 2007). The sale of recorded materials like films, video, tapes, discs (Oluran kinse, 2004) on food and nutrition for profit making, employment and sustainable development.

In clothing and textile, ICT can help people keep in touch with the fashion world through the internet, current magazines, television and so on for employment and sustainable development. Iyere (2007) noted that clothing needs and those of the family members and employment needs are met through clothing and textiles. Uko-Avionoh (2007) noted that Home Economists can acquire skills through the internet on pedicure, manicure, wigs and weave – on, and turn it into profit making venture and sustain her living. Modern clothing and textile technology and equipment can also be discovered and sought for based on the information in the internet and used for sustainable vocational development and self reliant. Youths can avail themselves of the opportunities in Home Economics through ICT for sustainable development.

ICT in Vocational Agricultural Education

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Agricultural Education according to Tibi (2004) is a systematic programme of instruction for public school students, out-of-school and post school youths and established farmers for agricultural methods and rural living. He added that it is training for jobs on farms and for occupations in such fields as food processing, marketing, farm products and repairing farm equipment. Livestock industry (poultry, rabbity, piggery and ruminants) can be established. Information on livestock business can be got through ICT media. Farmers were alerted through ICT media on the issue of bed flu and swine flu. Advise was given to the general public through ICT on the necessary precaution to be taken and the clinical signs and symptoms that must be reported to the nearest hospital. This information is on daily advert in National Television News. Jobs can be created through livestock industry for sustainable development. Other occupations in Agriculture for sustainable development include, horticultural and ornamental production / landscaping, field crop production and management, design and fabrication of farm tools, machine design/construction of farm structures, vegetable / irrigation farming and so on (Olaosebikan and Haruna 2007) can be sourced from the internet and used.

**ICT in Vocational Business Education**

Business education is an integral part of vocational education that is recognized as that type of education that empowers young people and adults to become self-reliant and stimulates setting up of private businesses for wealth creation (Okoro 2008).

According to Anao (1986), Business Education is the total knowledge, skills and attitude that are required for successful promoting and administering a business enterprise. He maintained that Business Education prepared youths for the world of job at the pre-vocational, vocational and professional levels. Okoro (2008) said that the acquisition of relevant skill is a tool of increasing and boosting the process of processing effective ready knowledge in developing one’s aptitude and ability in a particular field. Okafor (1991) viewed Business Education as education about business with major objectives as:

(a) To provide occupational instruction for students deriving careers in business.
(b) To help to develop consumer and economic understanding competencies of students at all grades and age levels. Business education can be of two perspectives Nwaokolo (1990) these are:
   (i) Business skills, knowledge and attitude acquired from secondary and post secondary institutions for performing business operation of a personal or corporate nature.
   (ii) Business teacher education competencies acquired from the college of education and polytechnics with department of business teacher.

The areas of Business education include; accounting, secretarial studies, marketing as well as computer education (Adebayo and Oyesode 2006). Secretarial skill acquisition and competencies particularly in this age of office automation, information technology (IT) is another area where the impact of sustained business education should be seen to reduce unemployment providing trainees with employable skill, ICT skills for sustainable development is not alien to business education.
Business education students can be self-employed and employer of labour themselves. They can render services to the society through typing of documents, photo stating of documents on copiers, laminating of documents using laminating machines, spiral binding services, commercial telephone services, stencil duplicating process for large scale document production, document collation services, computer services particularly word processing to convert raw data into comprehensive and mailable document with the use of different sizes and styles of character fronts, electronic mail (e-mail) services and so on (Adebayo and Oyesode, 2006).

**The Benefits of ICT to Vocational Education**

Ofulue (1999) cited Okwuanaso (2004) maintained that the educational system is also benefiting from the revolution ICT. The use of ICT in teaching and learning will bring about sustainability of vocational education in Nigeria and will go along way to producing skilled graduates that will effectively function well in their places of work. The following are the benefits of ICT:

(a) It allows fast access to data  
(b) Keep storage requirements to a minimum  
(c) Allows data to be accessed by more than one person at a time.  
(d) There is better security as data can be coded.  
(e) Few staff need to be employed  
(f) Data cannot be misplaced as it is kept inside the computer system.

**Conclusion**

Vocational education is a well – acknowledged education for sustainable development. Introduction of ICT in vocational / Technical Education make for up date and acquisition of more skills for self reliant and employment. As students acquire more skills through ICT, alternative equipment/facilities should be considered in order to reduce cost and make room for the utilization of local available materials for skill acquisition.

**Recommendations**

1. Students should be encouraged to have interest on Vocational and Technical Education as it can afford them the opportunity to be self employed.  
2. Due to technology, the world has become a global village. Vocational/Technical Education students must be computer literate.  
3. Government should provide necessary facilities/ equipment for Vocational and Technical Education and employ experts to handle them.  
4. They should also provide multi-purpose vocational centers or other similar institutions for artisan training.

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