THE USE OF INFORMATION AND COMMUNICATION TECHNOLOGY (ICT) IN SCHOOL OF POSTGRADUATE STUDIES (SPGS) FOR MANPOWER TRAINING

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Abstract

The study adopted a descriptive survey design which sought information on the use of ICT in school of postgraduate studies (SPGS) for manpower training. The study was conducted in SPGS in state universities in South Eastern Nigeria. Three research questions guided the study. The population for the study comprised all the postgraduate (PG) students in the state universities. Random sampling was used to select 300 PG students (100 each) from three state universities. A questionnaire entitled "Use of ICT in School of Postgraduate Studies for Manpower Training" was developed by researchers and used for data collection. The validity of the instrument were established by two experts; one in measurement and evaluation unit and one in ICT unit all in Chukwuemeka Odumegwu Ojukwu University. The reliability of the instrument was determined using test-retest method. Pearson product moment correlation co-efficient was used to obtain a correlation co-efficient of 0.87. Mean was used to answer the research questions. A mean of 2.50 and above were acceptable while mean of 2.49 and below was not acceptable. The findings revealed among others that SPGS use ICT to deliver part of the learning content to the learners, supplement and extend content provided in a different form, prepare letters and memos, advertise and update their programmes, gather information for research and communicate information to students and colleagues; it revealed that ICT was not frequently used by teacher and postgraduate students in the classroom for manpower training. It also revealed the factors militating against the use of ICT to include: lack of teachers with skill and knowledge of ICT use, lack of ICT infrastructures and fund. It was recommended among others that government should provide ICT infrastructure, and fund professional development of PG staff especially their teachers.

Keywords: School of Postgraduate Studies, Higher Education, Manpower Training, ICT

Introduction

Manpower is the most significant factor that contributes to the success of any education system because it is the people that will put other resources to work. Manpower should be given attention to achieve its educational goals and objectives. Manpower planning ensures the right person is available for the right job at the right time. It involves formulating a forward looking plan and necessary human effort to develop the entire staff for the survival and growth of the educational system.

Manpower training Wikipedia, the free encyclopedia (2014) described manpower training to be the series of activities which an organization under takes to secure for itself a regular supply of skilled manpower to meet future needs. The activities are geared towards improving the performance of existing staff, giving them opportunities for growth, management and providing for smooth management succession within the

schools and other organizations. It is a process of intellectual and emotional achievement through providing the means by which staff can grow on their jobs for sustainable development. Since 1960, the human factor of production (manpower) as it is alternatively called has increasingly been recognized as the most critical resource of the factors without which an effective utilization of all other factors remains a dream. Although it might be tempting to attach more importance to the availability of physical resource such as capital and equipment undermining that they are mere passive factors of production that depend on human intellectual as the active agent to exploit so as to achieve the objective of an organization. Thus, manpower is the main stay of any organization and educational system.

School of postgraduate studies is considered a part of higher education. Federal Republic of Nigeria (FRN (2004), national policy on education noted that higher education also referred to as tertiary education, post-secondary education or further education is the education given after secondary education in universities, colleges of education, polytechnics, monotechnics including those institutions offering correspondence courses. Higher education Wikipedia, the free encyclopedia (2014) also referred to it as a level of education that is provided by universities, community colleges, liberal arts colleges, institutes of technology and other cognitive level institution that award academic degrees or professional certificates with the main aim of research development, manpower development and training. It uses training and manpower development as a tool for achieving operational efficiency and effectiveness. World Bank (2010) drew the bottom line to be the degree of intellectual capacity required at this level of education.

FRN (2004) stated that the goals of higher education shall be to: contribute to the national development through high level manpower training; develop and inculcate proper value for the survival of the individual and society; develop the intellectual capability of individual to understand and appreciate their local and external environments; acquire both physical and intellectual skills which will enable individuals to be self-reliant and useful members of the society; promote and encourage scholarship and community service; forge and cement national unity; promote national and international understanding and interaction. All the above stated goals can be achieved through: teaching, research and development; generation and dissemination of knowledge, inter-institutional co-operation; dedicated services to the community through extramural and extension services.

Alabi, (2004) noted that the most important aspect of every higher education are the teachers and students, thus, requiring well trained manpower to be at the middle of giving and receiving knowledge in higher institutions so that the process will not fail. Peretomode (2008) added that higher education is expected to teach people who are fortunate to pass through it to think further, broader and deeper than they have been so far brought up to do; give students training of mind to enable them think more critically to understand and cope with all aspects and questions of human existence both personally and socially; and provide ethical education (man who is not just thinking

creature but one who knows the differences between right and wrong). Higher education in order to effectively accomplish these knowledge based process requires a tool such as information and communication technology (ICT). Information and communication technology is the main tool that helps to identify and access reliable sources of information and communicate the information effectively (Igwe, 2005). Information society in this age of globalization needs a workforce that can use ICT as a tool to increase knowledge, productivity and creativity, since knowledge as a process includes knowledge acquisition, knowledge incubation, knowledge application, knowledge amplification and knowledge dissemination.

ICT is an umbrella term that include any communication device or application encompassing radio, television, cellular phones, computer and networks, hardware & software, satellite systems etc. as well as the various services and applications associated with them such as video conferencing and distance learning (Information and Communication Technology for Development (ICT4D) Wikipedia, the free encyclopedia, 2014). It includes all the different means, methods and tools that humans have used through-out history to help manage information, conduct business, and communicate with one another and better understand the world. It brings together the services of computer office equipment, communication infrastructures etc. to create a new information infrastructure which is capable of transmitting textual, audio and visual images at a distance. Oduduwa (2006) also defined ICT as range of technologies for gathering, storing, retrieving, processing, analyzing, and transmitting information. World Bank (2010) noted that ICT covers internet service provision, telecommunications equipment and services, information technology equipment and services, media and broadcasting, libraries and documentation centers, commercial information providers, network based information services and other related technology, specifically communication technology.

Using ICT in higher education will provide opportunity for mobile learning. Mobile learning according to ICT4D (2014) is the exploitation of ubiquitous handheld technologies, together with wireless and mobile phone networks, to facilitate, support, enhance and extend the reach of teaching and learning. Advancements in hardware and networking technologies made it possible for mobile devices and applications to be used in the field of education. Newer development in mobile phone technology makes them more embedded, ubiquitous and networked, with enhanced capabilities for rich social interactions and internet connectivity. Such technologies can have a great impact on learning by providing a rich, collaborative and conversational experience to both teachers and students. Mobile learning can be adopted in classes since aside from the fact that it helps in the enhancement of students' learning; it also helps teachers to easily keep track of the students' progress. Communication when needed is possible at any given time. Discipline and responsibility must go through with the contents in mobile learning since whatever is posted is made available to those who are given access.

The use of this new technology (ICT) in manpower training; can serve three main functions: (a) to deliver all or part of the learning content to learners; (b) to

supplement and extend content provided in a different form e.g. print; (c) and to provide a two way channel of communication for exchange between tutors and students with their peers for feedback or for learning problem-solving, advice, debate and support (Laudon, Trower, Laudon, 1994). ICT can be used to remove communication barriers such as that of space and time (Lim and Chai, 2004). It allows for the creation of digital resources like digital libraries where the students, teachers and professionals can access research material and course material from any place at any time (Bhattacharya & Sharma, 2007; Cholin, 2005). Such facilities allow the networking of academics and researchers and hence sharing of scholarly material. This avoids duplication of work (Cholin, 2005). ICT eliminates time barriers in education for learners as well as teachers. It eliminates geographical barriers as learners can log on from any place (Sanyal, 2001; UNESCO, 2002; Bhattacharya & Sharma, 2007). ICT provides new educational approaches (Sanyal, 2001). It can provide speedy dissemination of education to target disadvantaged groups the use of mobile phones has impacted rural living in so many ways (UNESCO, 2002)

ICT in the school of postgraduate studies is essentially the computer and network-enabled transfer of skills and knowledge. It includes web-based learning, computer-based training, virtual classroom opportunities and digital collaborations. Learning content can be delivered through the computer, internet, intranet/extranet, audio and video tape, satellite television and CD-ROMs. It can be self-paced, instructor led and includes media in the form of text, image, animation, streaming video and audio. Broadly speaking, computers have been applied in two main ways in education: Computer Aided Learning (CAL) and Computer Aided Instruction (CAI). CAL is a computer service that offers one various options of available facilities from which one can make a choice and then guide himself through the learning process while CAI is a facility whereby the program (software) effects control, sets out to teach the learner something and by presenting information and asking question decides whether the students is showing sufficient understanding at each stage. And if so, the program goes on, otherwise; it repeats the items or presents it in another way so that the user may follow. The major advantage of computer-aided instruction is its potential for individualized instruction. Individualization of instruction entails that lessons are prepared to meet each learners needs. Confidentiality of each learner's performance is strictly maintained irrespective of the fact that the learner is one of the many learners using the system at the same time. CAL can as well be used for group instruction helping school of postgraduate studies to overcome the problem of location and time. Computer terminals can be located in different locations and learners can make use of them at their own time and rate (Anigbogu 2003). These technologies help to deliver and make education accessible to whoever that needs it (Asah, 2011).

Many ICT tasks require acquisition of new resources, expertise and careful planning. The education and training of ICT professionals require teachers with knowledge and skill of ICT within the current levels of technological sophistication. In other to use ICT for manpower training in higher education, it is important to train manpower to do such work. One of the most important aspects of manpower training in this connection

is improved quality in teachers' knowledge and skill of ICT. Teachers who have competence in the use of ICT sometimes do not integrate them in their teaching due to problems such as lack of ICT resources, infrastructures, insufficient number of computers and accessories, difficulty in integrating ICT to instruction, scheduling computer time, lack of internet connection, reliable source of power supply and technical assistance (Pelgrum 2001, Kwacha, 2007) These stated problems can hinder the use of ICT in manpower training if not properly addressed in postgraduate schools. Students need to be clothed with knowledge and skill of ICT and should also be trained on the use of ICT to handle immediate job requirements in better, quicker and efficient manner.

The pertinent question at this point is: to what extent do schools of postgraduate studies (SPGS) use ICT for manpower training and how frequently do postgraduate students use ICT with their students for manpower training? Proffering answers to these questions are the thrust of this study.

Research Questions

1. To what extent do schools of postgraduate studies use ICT for manpower training?
2. How frequently do postgraduate students use ICT with their teachers in the classroom for manpower training?
3. What are the challenges militating the use of ICT by schools of postgraduate studies for manpower training?

Methodology

The study adopted a descriptive survey design which sought information on the use of ICT in postgraduate studies for manpower training. The study was conducted in schools of Postgraduate (SPGS) studies in South Eastern Nigeria. The population for the study comprised all the postgraduate students in the five state universities in South Eastern Nigeria. Simple random sampling was used in selecting three state universities and 300 PG students (100 each from the three selected state universities – Chukwuemeka Odumegwu Ojukwu University (CCOU), Imo State University (IMSU) and Ebonyi State University (EBSU)). The instrument for data collection was a questionnaire entitled "Use of ICT in SPGS "UICTSPGS". The instrument was developed by the researchers. The instrument has two parts: Part 1 sought information on the personal data of the respondent; Part 2 was on the issue of the study. Part 2 had three sections. Section A sought information on the extent to which schools of postgraduate studies use ICT for manpower training; section B was on how frequently postgraduate students use ICT with their teachers for manpower training while section C was on the challenges militating the use of ICT by schools of postgraduate studies for manpower training. The structured pattern adopted was a four point Likert-type scale of strongly agree (SA), agree (A), disagree (D) and strongly disagree (SD). The responses were weighted as follows; SA = 4, A = 3, D = 2, SD = 1. The validity of the instrument was established by two experts; each in the Measurement and Evaluation unit and ICT unit all in Chukwuemeka Odumegwu Ojukwu University. Their criticisms were noted while their

suggestions were considered and incorporated in the final draft of the questionnaire. The reliability of the instrument was determined using the test re-test method. The instrument was administered on 20 postgraduate students selected randomly from Delta State University, Abraka. Two weeks later, the instrument was re-numbered and re-administered on the same group of PG students. The first and second scores generated were correlated using the Pearson-product moment correlation co-efficient to obtain a value of 0.87.The researcher appointed and trained three research assistants (one from each of the three universities) who helped to administer the instrument on the respondents. They waited on the respondents to respond to the questionnaire items and collected same from them. This approach saved time, reduced cost and ensures high percentage return of the instrument. Data collected were analyzed using mean. Any score from 2.50 and above was adjudged to be accepted while scores below 2.50 were regarded as non- acceptable.

Results

Research Question One

To what extent do teachers in school of postgraduate studies use ICT for manpower training?

Table 1: Mean Scores of Respondents on the Extent to which School of Postgraduate Studies UseICT for Manpower Training

S / N	Item: Extent to which SPGS use ICT for Manpower Training	COOU X	IMSU X	EBSU X
1.	SPGS use computers to prepare letters and memos	3.45	3.43	3.58
2.	They use computers to keep track and update of students' academic records	2.35	2.25	2.40
3.	SPGS use ICT to keep inventory of school properties and update them from time to time	1.85	1.55	1.69
4.	They use ICT for online student registration	1.52	1.76	2.46
5.	They use ICT to advertise and update information about PG programmes	2.70	2.92	2.75
6.	SPGS use ICT for online students' course registration	1.36	1.15	1.20
7.	They use ICT to maintain students' continuous assessments	1.46	1.10	1.30
8.	They use ICT to retrieve students' progress report	2.34	2.11	2.40
9.	SPGS and their students use internet services for research purposes	3.20	3.21	3.42
10.	They use ICT e.g. projector to deliver lectures during seminars, conference and workshops	3.10	3.05	3.35
11.	SPGS use ICT to deliver classroom instruction	1.73	1.20	1.25
12.	They use ICT (e.g. print) to supplement and extend learning	3.15	3.05	3.20
13.	SPGS use ICT as a two way channel of communication between teachers and students	3.55	3.06	3.36
14.	They use ICT to design and develop learning material	3.20	3.10	3.11
15.	SPGS use ICT in administration of students' data and that of personnel.	1.20	1.40	1.54
16.	They use ICT to exchange electronic teaching materials	2.58	2.57	**3.01**

Table I indicated that items 1, 5, 9, 10, 12, 13, 14, and 16 are extent to which SPGS of COOU. IMSU and EBSU use ICT for manpower training. They had mean rating above 2.49.Items 2, 3, 3, 6, 7, 8, 11, and 15are extent to which SPGS do not use ICT for manpower training in COOU, IMSU and EBSU. They had mean rating below 2.50.

Research Question Two

How frequently do postgraduate students use ICT with their teachers in the classroom for manpower training?

Table 2: Mean Scores of Respondents on how Frequently Postgraduate Students Use ICT with their Teachers in the Classroom for Manpower Training.

S / N	Item: Frequency of use of ICT for manpower training	COOU X	IMSU X	EBSU X
1.	Everyday	1.28	1.45	1.55
2.	Once a Week	1.60	1.59	1.41
3.	Once a Month	1.52	1.68	1.48
4.	Never	1.71	1.37	1.63
5.	Everyday	1.43	1.37	1.62

Table 2 revealed that items 17 through 21 had mean below 2.50. This shows that all the respondents agreed that postgraduate students of COOU, EBSU and IMSU were not using ICT quite often with their teachers in the classroom for manpower training.

Research Question Three

What are the challenges militating the use of ICT by schools of postgraduate studies for manpower training?

Table3: Mean Scores of Respondents on the Challenges Militating the Use of ICT by Schools of Postgraduate Studies for Manpower Training

S / N	Item: Challenges militating the use of ICT by schools of postgraduate studies for manpower training	COOU X	IMSU X	EBSU X
1.	Lack of teachers with skill & knowledge of ICT	3.16	3.15	3.26
2.	High rate of computer illiteracy among students and teachers	2.75	2.89	2.83
3.	Lack of facilitating structures e.g. computer laboratory	2.90	3.11	3.03
4.	Lack of adequate number of ICT in the school	3.21	3.24	3.13
5.	Lack of standardized syllabus for ICT education	3.11	2.95	3.01
6.	Lack of engineering personnel/ technicians	3.41	3.22	3.20
7.	lack of computer industry in the state to lower cost of computer	2.18	2.30	2.27
8.	Inability to purchase the needed ICT by students	3.14	2.98	3.00
9.	Lack of fund for routine maintenance & repairs of the ICT	3.12	3.04	3.10
10.	Insecurity of computer & its accessories	2.25	1.60	2.39
11.	Problems concerning equity	2.35	2.12	2.05
12.	Fear of the new technology by the scholars of old	3.48	3.35	3.38
13.	Limited ICT infrastructures especially internet access,	3.29	3.11	3.02
14.	Inconsistent power supply in the school	2.55	3.30	3.22

Table 3 indicated that items 22 through 27, 29, 30, 33, 34 and 35 had mean ratings above 2.49 which is the cut off for decision making; thus, they were identified as challenges facing the use of ICTs in SPGS for manpower training. Items 28, 31, and 32 with mean rating below 2.50 were not identified as one of the challenges facing the use of ICT in school of postgraduate studies for manpower training in the three Universities.

Discussion of Findings

Analysis made in table 1 revealed that schools of postgraduate studies use computers to prepare letters and memos, use ICT to advertise and update information about PG programmes, use internet services for research purposes, use ICT e.g. projector to deliver lectures during seminars, conference and workshops, use ICT (e.g. print) to supplement and extend learning, use ICT as a two way channel of communication between teachers and students, and also use ICT to design and develop learning material. SPGS do not use ICT to keep track and update students' academic records, to keep inventory of school properties and update them from time to time. They do not use ICT for online student registration, to conduct and maintain students' continuous assessments, to retrieve students' progress report, to deliver classroom instruction, and administration of students' data and that of personnel. This finding affirmed the work of Ololube, Ubogu and Egbezor (2007) that ICT infrastructures and facilities are not used for instructional delivery in Nigerian institutions.

Analysis made in table 2 revealed how frequently postgraduate students use ICT with their teachers in the classroom for manpower training. It showed that ICT is not frequently used by PG students and teachers in the classroom for manpower training. This agreed with the findings of Seiden (2000) which revealed a low level of usage of ICT equipment & facilities in schools.

Table 3 revealed among others that lack of teachers with skill and knowledge of ICT, high rate of computer illiteracy among students and teachers, lack of facilitating structures e.g. computer laboratory, lack of adequate number of ICT in the school, lack of standardized syllabus for ICT education, and lack of engineering personnel/ technicians are challenges militating against the use of ICT in school of postgraduate studies for manpower training. Lack of computer industry in the state to lower cost of computer, insecurity of computer and its accessories and problems concerning equity were not identified as one of the challenges facing the use of ICT in school of postgraduate studies for manpower training in the three universities. This affirmed the findings of Kwacha (2007) who noted that the most common problems associated with effective use of ICT are lack of qualified ICT personnel, cost of equipment, management attitudes, inconsistent power supply, inadequate telephone infrastructures particularly in rural areas & non-inclusion of ICT programmes in teacher's training curricula and at the basic levels of education. Hennessy, Harrison and Wamakote, (2010) noted that in many African Countries, major impediment is lack of qualified teachers. This problem is multiplied by growing poverty, lack of fund for teachers' salaries and the exponential rise in student population in the last two decades (National University Commission, 2005) due to free universal basic education. The crisis is worsening further as increasing number of teachers become afflicted by HIV/AIDS (Hennessy et al 2010). Olakulehin (2007) added that it has been observed by many that meeting the desperate need for more qualified, competent teachers is the most persistent and daunting challenge facing the African education system in general and the integration of ICT in particular. Lewis & Smith (2002) also noted that obstacles for

ICT implementation are limited equipment, inadequate skills, minimal support, time constraints and the teachers own lack of interest and knowledge about computer.

Conclusions

ICTs are transformational tools which when used appropriately can facilitate the acquisition of basic skills and knowledge necessary for manpower training. The study has revealed that for school of postgraduate studies to achieve manpower training, there must be commitment towards the use of ICT in teaching students especially in the classroom. School of postgraduate studies as part of higher education is committed to research, training, and manpower development. Development helps to expand knowledge, sharpen skills, cultivate attitudes and generate commitment appropriate for a particular role

Recommendations

The following recommendations were made based on the findings:

1. Students should endeavor to buy personal computers, modern and other accessories that will help them to gain access to the internet in this age of globalization.
2. Government should embark on a massive ICT and computer literacy training program for teachers and personnel of school of postgraduate studies through hands-on workshop approach, seminars, and conferences to develop their confidence with ICT and awareness of its potential.
3. Internet connected computers, videophone, e-sources/e-journals, e-mail facilities, fax machine, World Wide Web and multimedia systems should be provided in adequate quantities by the government for effective manpower training in schools of postgraduate studies.
4. All classrooms and auditoriums in schools of postgraduate should be connected to the internet so as to enhance Web-based instruction and use of multimedia courseware & software relevant to teaching and learning.
5. The State governments should employ technologists and technicians to take care of internet facilities and equipment, and also carry out routine repairs.
6. State Universities should provide standby generators and uninterruptable power supply devices to tackle the problem of epileptic or inconsistent power supply that exist in the schools.

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