
USE OF COMPUTER FOR THE PROMOTION OF ACADEMIC DUTIES OF ENGINEERING LECTURERS IN NIGERIA

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Abstract

Engineering lecturers play essential roles in promoting science and technology based education needed for national development. Engineering lecturers can achieve high productivity in their academic duties using computers. This paper discussed how the use of computers can enhance academic duties by engineering lecturers. Issues discussed in the paper are: the importance of engineering lecturers in national development; computer as a vital product of electronic technology; and the use of computer in fostering academic duties by Nigerian engineering lecturers. Certain recommendations are made to encourage the use of computer by engineering lecturers. The paper concluded that engineering lecturers in Nigeria should make adequate use of computers in their academic duties.

Key Words: Computer, Engineering Lecturers, Academic Duties, Productivity, Education, National Development

Knowledge and skills obtained from engineering can help in promoting sustainable development in Nigeria. It then implies that standard education in engineering is required to achieve sustainable development in Nigeria. This is so because such education is a vital resource to produce science and technology based graduates equipped for national development.

For Nigeria to attain a high standard of education in engineering, engineering lecturers need to be productive in their academic duties. Achievement of productivity for national development should be the focus of engineering lecturers. Chike-Okoli (2004) asserted that productivity is the measure of the efficiency with which a nation's resources are transformed into commodities and services and it depends heavily on human development even though productivity is a function of amount of manpower,

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materials, physical capacity and equipment available in use. It can also be said that productivity is the output resulting from a given resource input at a given time (Nwachukwu, 1988). So, engineering lecturers achieving productivity implies that the lecturers should be effective and efficient in their academic duties.

However, the application of electronic technology can enhance the productivity of engineering lecturers. An important electronic device which can be employed for effectively discharging academic duties in this modern era is the computer. Unfortunately, experience has shown that some engineering lecturers in Nigeria do not make adequate use of computers in their profession. In fact, Nigerian engineering lecturers need effective utilization of computers to enable them become more productive in their academic duties.

This paper discusses how the academic duties performed by engineering lecturers in Nigeria can be promoted using computer systems for sustainable development. In the discussion, the paper focuses on: Importance of engineering lecturers in national development, computer as a vital product of electronic technology, and use of computer in fostering academic duties of Nigerian engineering lecturers. Certain recommendations are made to encourage the use of computer by the engineering lecturers.

Importance of Engineering Lecturers in National Development

Engineering lecturers are charged with the responsibility for education in engineering. In general, workers play a vital role in the economy. Nwosu and Chijioke (2006) averred that a worker is someone who, in an effort to earn a living, engages in productive activity for the welfare of the society. Workers are human resources that provide the labour required in production. The importance of engineering lecturers as human resources in the economy and in national development is based mainly on their task of imparting engineering knowledge and skills to students in tertiary institutions. Idowu (1992) viewed engineering as a profession in which knowledge of mathematics and natural science gained by study, experience and practice is applied with judgment to develop ways to utilize economically the materials and forces of nature for the benefit of mankind. Nwosu (2010) opined that engineering is a discipline or activity that is in between science and technology for it deals with the use of scientific principle in making designs for production of materials and devices that make man feel more comfortable in his environment.

Education in engineering is an aspect of science and technology based education which is needed to project a nation forward. Okorafor (2006) pointed out that science as the basis of technology leads to national development and any nation whose scientific and technological education is weak cannot attain a great economy nor become self-reliant, however, the objectives or gains of science education can be

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achieved if there is concerted effort, availability of qualified, dedicated and competent science teachers.

Based on the academic duties of engineering lecturers, they are seen as teachers. Teachers actually determine what is to be learnt, control the learning experiences that go on in the classrooms and have their own personal values with notions about how education should be oriented. No educational system can rise above the levels of its teachers (Akinseye, 2004). Ipaye (1996) pointed out that the services of the teachers are indispensable to the nation for they, more than any other professional group, influence the lives of the Nigerian youths and therefore the nation's future.

Computer as a Vital Product of Electronic Technology

The nature of technology determines the level of productivity and improved technology increases productivity (Nwachukwu, 1988). Computer is a vital product of electronic technology that can promote productivity. It is made up of hardware components (the physical parts and circuitry) and software component (set of logical instructions). Anigbogu (2000) asserted that computer is an electronic device capable of accepting data and instruction, processing the data based on the instructions to generate result or output in such a manner that is to be equaled by any other machine known to mankind.

Nwosu and Chijioke (2006) noted that computer is an electronic device that makes working easier for man by accepting input data and, based on a set of logical instructions called programme, processes the data with a high speed and accuracy to generate an output or result. Nwosu (2004) pointed out that computer system has important characteristics useful to man: accuracy of results; high operational speed; reliability; flexibility; and neatness of work. Anigbogu (2000) noted that computer is a kind of machine which mankind can use to solve different types of problems much more easily.

Ekemezie (2003) was of the view that the purpose of computer system is to speed up problem solving and increase productivity. To achieve increased productivity there should be economy of time and energy. When a task is performed in a short time with less energy, productivity is enhanced. Fortunately, computer system is a technological device that saves time and energy and also produces accurate result (Nwosu and Chijioke, 2006).

The existence of computer has brought about the emergence of Information Technology (which is an integration of computer technology and telecommunications technology) useful in national development. An essential and prominent part of Information Technology is the Internet. The Internet stands for "International Network" *Journal of Resourcefulness and Distinction, Volume 10 No. 1, May, 2015, ISSN: 2276 - 9684*

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and it is the largest computer network that enables people use computers in the network to communicate from any part of the world, irrespective of the geographical distance. The Internet makes globalization possible. It is rightly pointed out by Inyiama (2004) that Information Technology has transformed the human world into a “global village” where people can easily communicate with one another in multimedia electronically, from any point in the globe and the technology affects socio-economic activities.

Based on the importance of computer in national development, its use in the education sector of the economy should not be neglected. Engineering lecturers in Nigeria should endeavour to use computer in their academic duties.

Use of Computer in Fostering Academic Duties of Nigerian Engineering Lecturers

Enhancing academic duties in engineering, for sustainable national development, entails human development of engineering lecturers. Adewole (1997) and Nwosu (2007) acknowledged that human development aims at equipping people in a society with the necessary knowledge, skills, abilities and environmental conditions necessary for them to achieve their full potentialities as human beings and also to function accordingly. A means of human development of engineering lecturers is acquisition of computer literacy. With the computer literacy, lecturers can use computer to achieve high productivity in their academic duties.

The use of computer makes working easier for engineering lecturers. For instance, recording and computation of students’ result can be done accurately and easier using computer system. Moreover, computer system can be used to store educational information - be it students’ academic records or administrative records - that can be retrieved and used. Nwosu (2007) acknowledged that the human brain is incapable of storing all information in its brain-memory; however, the storage ability (memory) of a computer enables the computer to store information which is too large to be stored on the human brain.

Academic duties become easier for engineering lecturers if they have relaxed mind and body. As posited by Nwosu (2009) adequate relaxation of the body and mind promotes healthy living required for productivity and development. Relaxation can be achieved through entertainment or recreational activities such as playing games, watching film, and playing music. Computer system serves as a recreational device that can be used for playing music, watching films, playing games. Thus, engineering lecturers can satisfy their urge to have rest or relaxation by using the computer as a recreational device for entertainment.

Use of computer in education aids intellectual growth. There are various education packages (software) like Computer Assisted Instruction (CAI), Computer Aided Learning (CAL), and Computer Managed Instruction (CMI) installed in the

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computer. Use of such education package by engineering lecturers enables them obtain engineering knowledge, and relearn any portion of a subject matter with ease and at a convenient pace for better understanding. Also, such packages help the lecturers get prepared for the tutorial sequences they want to engage students in. Computer also serves educational purpose for it is used in watching educative films. Educative films on disks can be played on the computer system and be watched for intellectual development.

Another way in which computer promotes intellectual growth of engineering lecturers is through the use of the Internet. Browsing on the Internet informs the lecturers on issues, concepts, ideas and technologies that can enhance their academic duties. The Internet is used for electronic learning (e-Learning). With e-Learning, as a form of Information Technology, knowledge and skills are made available to the lecturers irrespective of distance. In fact, e-Learning enhances distance education. Distance education is a form of planned learning that happens in a location different from the place of teaching.

Furthermore, computer helps engineering lecturers in their communication. Effective communication is needed to achieve effective academic functions. In fact, effective communication makes an educational organization to achieve high productivity. It is an axiom that meaningful development will not take place if there are inadequate communication facilities and strategies.

Engineering lecturers can communicate with people and organizations using text, audio, visual, audio-visual messages done with computer system. The lecturers can use computer system as teaching aids for effective communication with the students. For example, educational activities pertaining to engineering can be stored in a disk and played on a computer system for the better understanding of the students. So, computer can serve as an audio-visual aid which the teachers can use for effective communication in the classroom.

The Internet is useful in enhancing communication of academic information in engineering because it provides the medium needed for fostering effective distance-teaching in engineering. For instance, with the use of electronic mail (e-mail), on the Internet, engineering lecturers can send and receive messages to and from their students no matter their location. The Internet can offer the lecturers useful information on scientific and technological updates from around the world.

Conclusions

Engineering lecturers play a great role in the education system. It is an axiom that engineering education is a means for national development. So, it is expected that

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engineering lecturers should be effective and efficient in their duty of imparting engineering knowledge and skills to students.

Computer is a product of electronic technology which can enhance academic duties of Nigerian engineering lecturers. Modern society is characterized by the use of computer because of its advantages. In fact, the use of such electronic system in academic works fosters sustainable national development. So, engineering lecturers in Nigeria should not neglect the use of computer in their academic duties. Great effort need to be made in Nigeria to promote the use of computer system by engineering lecturers.

Recommendations

To encourage the use of computer by Nigerian engineering lecturers to promote their academic duties, the following are recommended:

- 1) engineering lecturers who are not computer literate should endeavour to be computer literate so as to effectively use the computer in engineering education.
- 2) engineering lecturers should ensure that they develop the attitude of using computer in their teaching so as to enhance scientific and technological development in Nigeria.
- 3) government and organizations concerned with engineering education should endeavour to provide engineering lecturers with computers for their academic duties.
- 4) government, organizations and individuals should encourage and support seminars, conferences, and workshops aimed at sensitization and acquisition of computer literacy by engineering lecturers.

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