

UTILIZATION OF ELECTRICAL/ELECTRONIC ENGINEERING IN EMPOWERING NIGERIAN YOUTHS FOR NATIONAL DEVELOPMENT

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Abstract

Youths are very vital in achievement of national development. So, they need to be empowered for the wellbeing of the nation. Electrical/electronic engineering can be employed in empowering the youths by enabling them engage in entrepreneurship and acquisition of education. The paper in dealing with the utilization of electrical/electronic engineering in empowering Nigerian youths for national development discussed on: impact of electrical/electronic engineering inhuman environment, application of electrical/electronic engineering in empowering Nigerian youths through entrepreneurship, use of electrical/electronic engineering in empowering Nigerian youths through education. Recommendations made in the paper stated certain measures and efforts to be made to encourage the use of electrical/electronic engineering in empowering Nigerian youths. The paper concluded that electrical/electronic engineering can enable the youth get empowered for job-creation and income generation, as well as for intellectual enhancement and self-reliance for sustainable national development.

Keywords: Youths, National Development, Empowerment, Electrical/electronic Engineering, Entrepreneurship, Education.

Background to the Study

Youths are the seeds for posterity in a nation. Youths, as leaders of tomorrow, are vital human resource needed in national development. It can be said that any misfortune, deficiency or abnormality experienced by the youths can retard national development. Maduewesi (2005) acknowledged that the youths occupy strategic position in political, social and economic processes and reforms. Based on the status of youths, Nigerian youths need to be empowered. Empowerment is the ability of people to take control of their life activities, having the capability to do things their own way, set their agenda, and aim at achieving such set goal (Young, 1993). Youth empowerment is essential because a lot of Nigerian youths are suffering due to unemployment and lack of adequate education. However, electrical/electronic engineering can be applied in empowering youths through

entrepreneurship (job-creation) and education. This paper dealt on utilization of electrical/electronic engineering in youth empowerment, through entrepreneurship and education, for national development in Nigeria. The paper focused on impact of electrical/electronic engineering in human environment, application of electrical/electronic engineering in empowering Nigerian youths through entrepreneurship, use of electrical/electronic engineering in empowering Nigerian youths through education. Certain recommendations are made in the paper and the paper ended with a conclusion.

Impact of Electrical/Electronic Engineering in Human Environment

Engineering is a discipline or activity that is in between science and technology for it deals with the use of scientific principle in designing and production of materials and devices that make man feel more comfortable in his environment (Nwosu, 2010). Idowu (1992) asserted that engineering is a profession in which knowledge of mathematical 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. One of the prominent fields of engineering is electrical/electronic engineering; and it deals with conduction of electricity (charges) through conductors (metals), semi-conductor materials or valves (vacuum and gas-filled devices). Semi-conductor materials and devices are principally used in modern electronic engineering, and the engineering is concerned with solid-state systems, computer, and telecommunication. On the other hand, electrical engineering deals with generation, transmission and distribution of electric power; electromagnetic/ electromechanical devices such as transformers, electric generators, and motors. Another aspect of both electrical and electronic engineering is instrumentation and control. It can be said that electrical/electronic engineering is the use of science of electricity to design systems for the technological wellbeing of man in his environment. Man experiences some pleasure and comfort in his environment due to presence of products of electrical/electronic engineering such as electric motor, generator, lamp, refrigerator, air-conditioner, electric cooker, radio, television, computer, telephone, video machine, calculator, audio amplifier.

In this modern era, electrical/electronic engineering has brought certain revolutions in human activities especially due to presence of electronics that has brought about emergence of information technology. As rightly noted by Inyama (2004), electronic technology has brought about changes in communication and the important development in electronic communication has impact on the way business, administration, education and government is conducted in the emerging world of the third millennium. Actually, electrical/electronic engineering can play a role in national development by positively influencing the life and actions of the youths. One of the roles of the engineering in the life of the youths, for national development, is promotion of entrepreneurship.

Application of Electrical/Electronic Engineering in Empowering Nigerian Youths through Entrepreneurship

Entrepreneurship is concerned with involvement in job-creation. It implies self-reliance because it is establishment of business in which one is self-employed for the purpose of making a living and solving people's needs. Okenwa (2005) noted that entrepreneurship is the willingness and ability of an individual to seek out investment opportunities, establish and run an enterprise successfully. A person who engages in entrepreneurship is called an entrepreneur. Thus, an entrepreneur acts as a 'job creator' and not a 'job seeker'. Entrepreneurship demands creative and innovative mind; so, an entrepreneur is expected to acquire skills, ideas and managerial abilities needed for effective and efficient running of the business enterprise. Osuwa (2005) pointed out that entrepreneurship involves the ability to set up a business enterprise and this ability "acquired" should be different in some aspects from the abilities acquired to enable a person obtain paid employment. There is need for Nigerian youths to engage in entrepreneurship (job-creation) because an issue that threatens national development in Nigeria is unemployment. It is unfortunate that a lot of youths in Nigeria are unemployed and so are liable to immoral activities such as stealing, killing, and duping, kidnapping that can threaten national insecurity and, hence, negatively affect national development. In fact, youths engaged in entrepreneurship can create employment opportunities in that they, as entrepreneurs, can establish businesses and employ people for livelihood. Nwosu (2005) pointed out that employment helps to generate income for a happy and healthy living as well as prevention of idleness that is associated with social vices, which inhibit socio-economic development.

There are some job opportunities which the knowledge and utilization of electrical and electronic engineering can provide for the youths. The youths can work as an operator of electrical and electronic systems, computer programmer, designer of electrical/electronic systems, electrical/electronic engineering tutor, consultant in electrical and electronic activities, vendor of electrical and electronic products, or manager in organization that is concerned with electrical and electronic engineering. Involvement of the youths in various self-employed works can promote self-reliance for generation of income (money). It is obvious that engaging in jobs enhances decent conduct and provides income for socio-economic wellbeing necessary for national development. Electrical/Electronic engineering makes it possible the existence of computer that can serve as an essential electronic machine needed to make job easier for the entrepreneur. Computer system has important features that make it serves as a useful electronic device for enhancement of entrepreneurship: it operates at a fast speed and gives accurate result; it is reliable for it does not experience fatigue and so can perform several functions for a long time; based on the flexibility of computer, data fed into it can be adjusted; and computer does a neat and nice work. There is no doubt that computer operates such as to enhance productivity. Ekemezie (2003) opined that the purpose of computer system is to speed up problem solving and increase productivity. Information is needed to achieve effective and efficient entrepreneurship because it is essential for meaningful interactions in any human

endeavour. Fortunately, electrical/electronic engineering has made the existence of information technology (associated with communication) possible. It is known that the major purpose of communication is to transmit information. Electronic systems and devices like phone (hand-set), computer, memory card, CD-ROM, can be used for storage and communication of information necessary to empower the youths in entrepreneurship.

In this modern era, there exists the Internet that has made the world a global village. With the Internet, the youths can communicate with people from any part of the world to enhance productivity, using facility like electronic mail (e-mail). E-mail provides a fast, economic convenient means of sending message to people and receiving messages from them. Also, Internet makes it possible to have business activities such as E-commerce, E-conferencing, etc. which the youths can use to enhance entrepreneurship. Electrical/electronic engineering can be used to promote practical experiences which the youths required for entrepreneurship. For example, an entrepreneurial activities or experiences can be broadcasted in radio and television for proper exposure of youths to real-life issues and occurrences in job-creation. Also practical business activity can be videotaped and watched for a clearer and deeper understanding that can foster learning in entrepreneurship. In addition to the use of electrical/electronic engineering in providing opportunities and resources for empowering the youths through entrepreneurship, the engineering can be employed in youth empowerment through education.

Use of Electrical/Electronic Engineering in Empowering Nigerian Youths through Education

Education will help to “reshape” the youths to be useful members of society. Ikponmwosa (2006) rightly asserted that education is the transmission of knowledge and acquisition of skills that will enable the individual survive in society and contribute to the development of society. Education is the strongest instrument devised by man on earth for his socio-economic emancipation and progress; and it is the society's instrument for perpetuation and/or continuity (Iredia, 2005). Generally, as posited by Onyido and Onyeike (2011), education is an act or experience that has formative effect on the mind, character or physical ability of an individual and it is a worthwhile venture for it is the most important engine that propels technological and national development. Nwaogu (1985) asserted that to educate a man means adding to real capital, therefore, increasing his productivity or real income. Hence, education has come to be regarded as an investment in human capital. Youths can get prepared for meaningful contributions towards national development when intellectually enhanced through acquisition of effective education. Fortunately, certain electrical/electronic systems can be used for educational purpose to enhance the intellect of the youths. For instance, computer, microphone, audio amplifier, projector, electric generator are electrical-based devices that can be used to achieve conducive environment for education.

Computer can be used for electronic learning through the use of education software like Computer Assisted Learning (CAL) or Computer Aided Instruction (CAI). The education software can enable a student (youth) revise any course material (subject matter) as often as possible for total mastery. CAI guides the student and enables him learn course material at his own pace and evaluate himself (Akudolu, 2004; Nwosu, 2006). Computer Aided Design (CAD) is a useful computer package (software) that can be utilized in scientific design. Students (youths) can learn through computer simulation, which enables creation of model of a real life system and experimenting or investigating on the model behavior to determine the performance of the real-life system when built. Computer can also be used for recreational activities, like watching films, playing games, in a manner that can promote education – educational films and games for acquisition of knowledge and skill can be enjoyed using computer.

Electrical/electronic engineering is useful in education through the use of information technology and the Internet. Olayiwola and Akintola (2006) and Nwosu (2013) acknowledged that in this modern and digital age, information technology is an essential medium for dissemination and acquisition of information and knowledge. Internet can provide multimedia like music, animation, educational games, e-learning, etc that can motivate them into active and serious study. Inyama (2004) acknowledged that Internet provides multimedia that facilitate acquisition of knowledge and skill in a manner that enables students learn and grasp much more easily, even when the subjects are considered difficult using conventional techniques. Electrical-based devices such as radio, television, audiotape, videotape, projectors can be employed to enhance education among youths such that there will be easy and better understanding of the subject or course being taught. As pointed out by Ukachukwu (2003), electronic media such as television, radio, computer, transparencies and videotapes are playing a significant role in education and they can be used to maximum advantage to improve instructions in classroom; and videotape enables quality instruction among students for it can be used to deliver lectures in various lecture halls at the same time, especially where the materials for practical demonstrations are limited or lacking.

Conclusion

The youths as one of the stakeholders in ensuring national development need to be empowered. There is need for youth empowerment in other to overcome unemployment existing in Nigeria. Also, for the youths to contribute effectively towards national development they need to be empowered through education. However, electrical/electronic engineering can be employed in youth empowerment for national development in Nigeria. Application of electrical/electronic engineering will help the youths engage in entrepreneurship useful in job-creation and income generation. Electrical/electronic engineering can enable the youth get empowered through education for intellectual enhancement and self-reliance for sustainable development in the nation.

Recommendations

To encourage utilize of electrical/electronic engineering in youth empowerment for national development it is recommended that:

1. Nigeria youths should have focus on and positive attitude towards the use of electrical/electronic engineering in entrepreneurship and education.
2. Youths studying electrical/electronic engineering and related courses should be hard-working and apply the education acquired in national development.
3. Government should help in provision of facilities and resources for fostering studies and activities in electrical/electronic engineering.
4. Stake holders (eg lecturers, engineers, vendors) concerned with electrical /electronic engineering should embrace ethics and diligence in their job.
5. The mass media should help to enlighten people on the role of electrical/electronic engineering on youth empowerment.
6. Families, organizations and the general public should give support in the utilization of electrical/electronic engineering in youth empowerment.

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