
Perceived Work Skills needed by Technology Education Students for Job Creation in Rivers State, Nigeria

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Abstract: *The study was conducted to determine the perceived work skills needed by technology education students for job creation in Rivers State, Nigeria. Descriptive survey design was adopted for the study having a population of 55 technology education final year students (electrical/electronics option) in Rivers State university, Port Harcourt. No sampling was done since the population was small and of manageable size. Three research questions guided the study. A 30-item questionnaire designed by the researchers and titled “Work Skills for Job Creation Questionnaire WSJCQ” was used for data collection from the respondents. The WSJCQ was face and content-validated by three experts in electrical/electronic engineering from Ken Saro-Wiwa Polytechnic, Bori, Rivers State. The instrument’s reliability was ascertained via Cronbach’s Alpha method as a reliability coefficient of 0.87 was obtained. Mean and standard deviation were used to analyze the research questions. The findings of the study revealed among others that electrical/electronic technology students need technical and entrepreneurship skills for job creation. Thus, it was recommended among others that Government should provide adequate training facilities in tertiary institutions in Rivers State for effective training of electrical/electronic technology students so as to become job creators and successful entrepreneurs upon graduation.*

Keywords: *Electrical/electronic skills, job creation, technology education, students.*

Introduction

The world today is being regarded as a global village due to the advent of digital technology. Global breakthroughs in technological innovations and inventions have contributed immensely to the quality of life of mankind. According to Akaninwor (2010), technology is the result of man’s efforts to do things more professionally. The information, techniques and tools with which the available resources of the environment are utilized to satisfy everyday needs of mankind is regarded as technology (Owo & Deebom, 2020). Technology is therefore seen as the systematic application of scientific and technical knowledge and skills to proffer solutions to the numerous insatiable needs of man. Technology entails the application of tools, materials, processes and systems by humans to solve their problems. It is the systematic application of knowledge to practical tasks in the industries. The whole essence of technology is to bring about an improvement in the way we do things to achieve more sophisticated results that would be globally recognized. Consequently, with adequate application of technological innovations, more jobs can be created to enhance the quality of life of average Nigerians. Thus, technology entails the study, mastery and utilization of manufacturing methods and industrial arts to bring about

positive transformation in the world as well as creating job opportunities for the unemployed. Technological innovations can be advanced through electrical/electronic technology.

According to the National Board for Technical Education (NBTE) (2006), electrical/electronic engineering technology is one of the accredited courses of instruction in polytechnics, colleges of technology, colleges of education (Technical) and universities. Electrical/electronic engineering covered electrical power system, electrical machines and devices, instrumentation and control, information and communication technology, digital electronics, analogue electronics, telecommunications systems among others (Owo, 2020). These diverse areas of specializations in electrical/electronic engineering are offered by students in universities, polytechnics and other tertiary institutions for the acquisition of practical work skills in engineering, applied sciences and technology.

Work skills are superior set of technical skills having direct applicability in the industry. Work skills empower employees to be productive in the world of work (Ademu, Adah, & Atsumbe, 2018). Skillful feats generally demand the application of already acquired knowledge and competence through training to achieving optimistic result including the acquisition of new knowledge. Skills are special abilities gained through committed learning and practice which enable an individual to become proficient in a chosen vocation. Okorie (2000) posits that skill refers to human capacity to perform any activity with dexterity and competence. Skills are acquired through learning and practice (Samuel, 2017). Similarly, Ogbuanya and Bakari (2014), assert that skill is an individual's capacity to control element of behavior, thinking and feeling within specified contexts and within a particular task domain. Thus, for students of technology education to be proficient in their chosen fields of study so as to create jobs, they need to develop and improve on their technical skills such as electrical drafting and design, electrical installation, electronic circuit trouble shooting, maintenance and repairs, instrument calibration, digital circuit design and analysis, among others. These skills and many more are best developed via technical vocational education and training (TVET).

Technical Vocational Education and Training (TVET) according to Adepoju (2014) is an educational training which encompasses knowledge, skills, competencies, structural activities, abilities, capacities, and all other structural experiences for securing jobs in the various sectors of the economy or even enabling one to be self-reliant by being a job creator. TVET is the type of education that prepares individuals for the world of work; it serves as an instrument for sustainable development (Nande, Awua & Mlumum, 2017). In the same vein, Man (2005) posits that TVET is the systematic and orderly transmission of knowledge, skills and values to develop a workforce capable of enhancing productivity and sustain competitiveness in the global economy. Furthermore, UNESCO as cited in Badawi (2013) describes TVET as a comprehensive term referring to those aspects of the educational processes involving, in addition to general education, the study of technologies and related sciences and the acquisition of skills, attitudes, understanding and knowledge relating to occupations in various sectors of economic and social life. Likewise, Raimi and Akhuemonkhan (2014) submit that for Nigeria to meet up with other industrialized nations in terms of technological advancement and job creation, adequate human and material resources need to be developed and deployed into TVET as a viable education orientation directed at meeting the right skill needs of the technical workforce in local industries.

TVET as an educational approach which stressed on the need to apply relevant skills, knowledge and attitudes for job creation in a given occupation or cluster of related occupations in any field of social and economic activity (Oluwale, Jegede & Olamide, 2013). To further buttress this assertion, Ayonmike and Okeke (2015) view TVET as that branch of education that uses information technology and globalization to impart technical and vocational skills to prospective industrial workers in a paid or self-employment. Also, Ukula in Sofoluwe (2013) posits that TVET is a highly useful education as its occupation content is such that the trainee acquires skills, attitudes, interests and knowledge to perform socially and economically, work that brings about self-development through skills and knowledge acquisition which serve as basic tools for the socio-economic development of any nation (Goel, 2010). Furthermore, Afeti (2010) opines that technical vocational education and training is very crucial in the training and development of local workforce for the ever-changing technological work environment as it exposes trainees to diverse industrial skills. In addition, Okoye and Okwelle (2013) report that TVET is mainly for those who will not only acquire it but also profit at it. It is therefore necessary to bring to the fore, that one major goal of TVET as contained in the National Policy on Education (NPE) (2013) is to provide trained manpower in the applied sciences, technology and business particularly at craft, advanced craft and technical levels. In essence, human capacity building in skill-based technological areas such as electrical/electronic engineering technology is best achievable through TVET. Corroborating this assertion, Ezeani and Urama (2014) submit that TVET is highly needed for the industrial development of the nation. This is because TVET programmes inculcate in the learners, knowledge, skills and desirable attitudes for legitimate work. Thus, the learners can create jobs for themselves from the skills acquired in TVET. TVET conveys manpower development from the training institutions to the world of work leading to job creation. Consequently, it is important for all students especially those studying electrical and electronics technology in universities, polytechnics and colleges of technology across Nigeria to take the issue of skills acquisition through TVET seriously as skills and competence are indispensable tools for job creation.

Statement of the Problem

One essence of technology education programme is to train students in skills for industrial productivity and job creation capable of fostering national development. Graduates of technology education (electrical/electronics option) supposed to create jobs for themselves in order to earn a living based on the work skills acquired from the programme. However, most technology education students in Nigeria presently lack what it takes to secure paid employment or becoming self-reliant due to poor acquisition of work skills in electrical/electronics technology. According to Igberadja (2014), the Nigerian labour market reports that Nigerian graduates do not possess the requisite employability skills due to poor implementation of educational curriculum. Technology education students seem to be ignorant of the emerging work skills needed for job creation. It is a known fact that one major way of solving a problem is to identify the real cause of problem. Thus, there is need for students to be aware of the appropriate skills required for job creation which could be developed from technology education programme. This development informed the researchers' quest to carry out this study entitled "Perceived Work Skills needed by Technology Education Students for Job Creation in Rivers State, Nigeria".

Purpose of the Study

The study aimed at determining the Perceived Work Skills needed by Technology Education Students for Job Creation in Rivers State, Nigeria”. Specifically, the study sought to:

1. Determine the technical skills needed by technology education (electrical/electronic) students for job creation in Rivers State, Nigeria.
2. Determine the entrepreneurship skills needed by technology education (electrical/electronic) students for job creation in Rivers State, Nigeria.

Research Questions

The following two research questions were posed by the researchers to guide the study:

1. What are the technical skills needed by technology education (electrical/electronic) students for job creation in Rivers State, Nigeria?
2. What are the entrepreneurship skills needed by technology education (electrical/electronic) students for job creation in Rivers State, Nigeria?

Materials and Methods

The study adopted descriptive survey design. The study population was 55 technology education (electrical/electronics option) students in Rivers State University, Port Harcourt. Two research questions posed by the researchers guided the study. A 30-item questionnaire designed by the researchers and titled “Electrical/Electronic Skills for Job Creation Questionnaire (EESJCQ)” was used for data collection from the respondents. The questionnaire was constructed on a 5-point Likert’s scale of Strongly Agree (SA), Agree (A), Undecided (U), Disagree (DA) and Strongly Disagree (SD) having numerical values of 5,4,3,2 and 1 respectively. The EESJCQ was face and content-validated by three experts in electrical/electronic engineering from Ken Saro-Wiwa Polytechnic, Bori, Rivers State. The instrument’s reliability was established via Cronbach alpha method as a reliability coefficient of 0.87 was obtained. A total of 55 copies of the instrument were distributed to the respondents by the researchers. All distributed copies of the questionnaire were successfully retrieved from the respondents and used for data analysis. Mean and standard deviation were used to analyze the research questions. A criterion Mean of 3.00 was used for decision making. Thus, it was decided that an item with a calculated mean value equal or greater than 3.00 (3.00-5.00) will be accepted while any item whose mean value falls below the criterion mean of 3.00 will be rejected. Standard deviation values show homogeneity in the responses of the respondents.

Results

The results of the study were presented in line with the research questions that guided the study:

Research Question 1: What are the technical skills needed by technology education (electrical/electronic) students for job creation in Rivers State, Nigeria?

Table 1: Technical skills needed by Technology Education (Electrical/Electronic) Students for Job Creation in Rivers State, Nigeria

S/N	Item	\bar{X}_1	SD	Decision
1	Electrical/electronic technology students need equipment maintenance and repair skills for job creation.	3.61	0.81	Agree
2	Electrical/electronic technology students need troubleshooting skills for job creation.	3.76	0.76	Agree
3	Electrical/electronic technology students need information technology and data security skills for job creation.	4.02	1.11	Agree
4	Electrical/electronic technology students need skills in electronic circuit design and fabrication for job creation.	3.98	0.94	Agree
5	Electrical/electronic technology students need skills in electrical design and drafting for job creation.	3.91	0.93	Agree
6	Electrical/electronic technology students need skills in electrical wiring and installation for job creation.	4.12	0.98	Agree
7	Electrical/electronic technology students need skills in data communication and networking for job creation.	4.08	0.85	Agree
8	Electrical/electronic technology students need skills in instrument calibration for job creation.	2.78	0.79	Disagree
9	Electrical/electronic technology students need skills in electrical alarm system installation for job creation.	3.86	0.69	Agree
10	Electrical/electronic technology students need skills in design and construction of radio amplifiers for job creation.	2.91	1.03	Disagree
11	Electrical/electronic technology students need skills in cable network installation for job creation.	3.23	0.94	Agree
12	Electrical/electronic technology students need skills in air conditioning repair and maintenance for job creation.	4.11	0.67	Agree
13	Electrical/electronic technology students need skills in electrical machines installation and maintenance for job creation.	4.26	0.85	Agree
14	Electrical/electronic technology students need skills in siren and fire alarm construction for job creation.	4.03	0.92	Agree
15	Electrical/electronic technology students need skills in electrical appliances maintenance for job creation.	3.84	0.87	Agree

Source: Researchers' Field Survey, 2022.

Table 1 revealed that the respondents agreed with all the items as technical skills needed by electrical/electronic technology students for job creation in Rivers State, Nigeria except items 8 and 10 whose mean values fall below the criterion mean of 3.00. This indicated that the electrical/electronic technology students do not know that they need skills in instrument calibration and radio amplifier design and construction for job creation. Standard deviation values ranging from 0.67 to 1.11 indicated closeness in the responses of the students.

Research Question 2: What are the entrepreneurship skills needed by technology education (electrical/electronic) students for job creation in Rivers State, Nigeria?

Table 2: Entrepreneurship Skills needed by Electrical/Electronic Technology Students for Job Creation in Rivers State, Nigeria

S/N	Item	\bar{X}_1	SD	Decision
1	Electrical/electronic technology students need creative thinking skills.	3.28	0.85	Agree
2	Electrical/electronic technology students need effective communication and networking skills.	3.86	0.78	Agree
3	Electrical/electronic technology students need leadership skills.	3.82	0.93	Agree
4	Electrical/electronic technology students need risk-taking skills.	4.09	0.81	Agree
5	Electrical/electronic technology students need digital marketing skills.	2.86	0.94	Disagree
6	Electrical/electronic technology students need strategic planning skills.	3.74	0.87	Agree
7	Electrical/electronic technology students need business management skills.	2.99	0.88	Disagree
8	Electrical/electronic technology students need time-management skills.	3.18	0.86	Agree
9	Electrical/electronic technology students need interpersonal skills.	3.87	0.91	Agree
10	Electrical/electronic technology students need skills in financial management.	2.91	1.06	Disagree
11	Electrical/electronic technology students need ICT skills	3.96	0.94	Agree
12	Electrical/electronic technology students need skills in carrying out market survey.	3.77	0.79	Agree
13	Electrical/electronic technology students possess innovative skills.	3.98	1.21	Agree
14	Electrical/electronic technology students need team working skills.	3.08	0.78	Agree
15	Electrical/electronic technology students need project management skills.	4.08	0.74	Agree

Source: Researchers' Field Survey, 2022.

Table 2 revealed that all the items represent entrepreneurship skills needed by electrical/electronic technology students for job creation except items 5, 7 and 10 whose mean values fall below the criterion mean of 3.00. This showed that electrical and electronic technology students do not have the awareness of the need for digital marketing, business and financial management skills for job creation in Rivers State. Standard deviation values ranging from 0.74 to 1.21 showed homogeneity in the responses of the students.

Discussion

The result as presented in Table 1 showed that electrical and electronic technology students need to develop core technical skills in their chosen field through TVET for job creation in Rivers State. This finding agrees with Adepoju (2014) who sees TVET as an educational programme which encompasses knowledge, skills, competencies, structural activities, abilities, capacities, and all other structural experiences for securing jobs in the various sectors of the economy or creating jobs for economic development. Similarly, this finding corroborates Man (2005) who opines that TVET transmits knowledge, skills and values to develop human capacity capable of enhancing productivity and sustain competitiveness in the global economy. Thus, TVET generally enhances the skills development of students for job creation and self-development which are two major ingredients for national development.

The finding as indicated in Table 2 showed electrical/electronic technology students need entrepreneurial skills which can be acquired via TVET for job creation in Rivers State. This finding corroborates the views of Okwelle and Owo (2018) that TVET inculcates relevant entrepreneurship skills in the learner for job creation and self-development. This finding also agrees with the views of Afeti (2010) who submits that technical vocational education and training is very crucial in the training and development of skilled entrepreneurial workforce required for the ever-changing technological work environment. Therefore, for electrical/electronic technology students to create jobs as entrepreneurs, they need to acquire relevant technical and entrepreneurship skills through technical vocational education and training programmes. Acquisition of relevant work skills would ensure that any business venture floated will be properly managed and sustained for an improved standard of living of the recipients and the society at large.

Conclusion

Electrical/electronic technology is an indispensable field of engineering technology as no meaningful economic and technological activities can thrive without adequate electricity supply. Hence, students of electrical/electronic technology should avail themselves of the numerous opportunities available in the field to acquire the needed work skills for job creation and sustainability. Therefore, enrolment into TVET should be encouraged by all stakeholders (parents, teachers, policymakers and education administrators) to inculcate in our young people relevant skills for massive job creation in Nigeria.

Recommendations

From the findings of the study, the following recommendations are suggested:

1. Government should provide relevant training facilities in all technology institutions' workshops in Nigeria for skill training of technology education students.
2. Government should adequately fund technology and engineering programmes in tertiary institutions across Nigeria.
3. Parents should encourage their children and wards to enroll into such TVET programmes to acquire relevant technical and entrepreneurship skills for job creation.
4. Electrical/electronic technology students should endeavor to put to use the skills and competence acquired through TVET for their sustainable development by being job creators.
5. Government should encourage electrical/electronic technology students to own personal businesses through the provision of loans with little or no interest.

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