

Entrepreneurial Competencies Needed by Electrical/Electronic Graduates of Technical Colleges in Plateau State for Self-Employment: Implication for Sustainable Development in Nigeria

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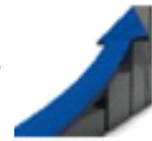
Abstract

This study is to determine the entrepreneurial competences required by electrical/electronic graduates of Technical Colleges in Plateau State for self-employment. The study was necessitated as a result of the prevailing issue of unemployment among graduates of technical colleges which has become a thing of worry for all and sundry. Three purposes of the study with corresponding three research questions and a null hypothesis guided the study. A survey research design was used for the study. Population was 95 technicians of electrical/electronic graduates who comprise 50 of government employed and 45 self-employed graduates of the same programme. The instrument for data collection was questionnaire structured by the researchers which were made up of three sections according to three research questions of the study. The questionnaire has a total number of 28 item statements structured in four-point response categories of most highly needed, mostly needed, slightly needed and not needed with weighting values of 4, 3, 2 and 1 respectively. 95 copies of the questionnaire were administered to the respondents and collected by the researchers. Mean with standard deviation was used to answer the research questions while t-test was used to test the null-hypothesis at 0.05 level of significance. The findings of the study showed that ability to accommodate and plan for changes in technology among others are the managerial competencies needed for self-employment while skills to rectify faults among other findings are the technical competence needed by technicians of electric/electronic graduates for self-employment. It was found that ability to take wise decisions based on the available facts and being honest to customers and employers among others are interpersonal competencies needed by the graduates for self-employment. Based on the findings of the study, recommendations were made which include, that education authorities and government at all levels should create enough awareness about entrepreneurship education for onward education of the ailing problems of unemployment and abject poverty.

Keywords: Entrepreneurial competencies, electrical/electronic graduates, self-employment, sustainable development.

Introduction

Electrical/Electronic Vocation is a programme of study that is offered in Technical Colleges, Colleges of Education, Polytechnics and Universities. The courses in the programme are given to the students of such Colleges to equip them to face the challenges of employment, or seek

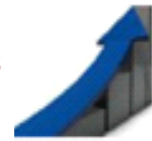


admission into tertiary institutions that comes after graduation. Electrical/electronic trade was designed to provide training for persons interested in the areas among which are installation and maintenance of electrical and electronic system found in residential, commercial and industrial buildings. The programme which technician of electrical/electronic graduates went through according to Igbojionu, (2008). are meant to train them to gain admission into tertiary institutions in the field or to be employed in industries or become successful entrepreneurs. This is in accordance with the objectives of education as contained in National Policy on Education (2013) which states that, Technical Education should mark optimum contribution by national development by:

1. Intensifying and diversifying its programme for the development of high-level manpower within the context of the needs of the society.
2. Making professional course content reflect our national requirement.
3. Making all students part of the general programme of all-round improvement in education to offer general study courses such as history of ideas, philosophy of knowledge, nationalism and information technology (IT) and;
4. Making entrepreneurial skills acquisition a requirement for all Nigerian Colleges and Universities.

To become successful or be employed in any of the vocational field area, graduates of electrical/electronic trade need to acquire certain competencies and skills to enable them contribute their bits in the overall development of the country. Hence graduates of technology programmes must possess some degree of competence in managerial, technical and financial accounting competencies to become successful entrepreneurs (Akinnowo, 2020). Recipient of technical education may find themselves working in industries as technicians or become self-employed as entrepreneurs.

One of the major aims of technical education is to prepare students of the programme for the world of work. Such aim is achievable when the students acquire relevant literate and numerable skills and competencies that will promote satisfaction brought about by successful self-employment and to enable them function well in the society. Uko, (2020) added that this satisfaction will be brought about by the acquisition of entrepreneurial competencies such that the student will recognise the social and economic benefits accruing to the entrepreneur. An entrepreneur on the other hand, is a person who assumes the responsibility and the risk of a business operation with the expectation of making profit (Anusa, 2020). Also, Nwachukwu (2015) sees an entrepreneur as a dreamer and ambitious risk taker who love to make things happen. Anusa and Nwachukwu have the same view about entrepreneurs, about their ability to take risk and utilise all available opportunities to maximize all available opportunities to maximise profit.



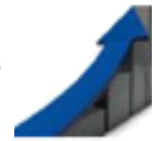
In another way, an entrepreneur is a good human relations officer that require good human relations to attracts and maintain customers (Akinawo, 2020). In that way customers are responded or attended to with great effort to make them come again. Thus, a successful entrepreneur achieves its objectives by talking to or a relating to customers calmly, cordially and respectfully to make them feel happy and at ease. To achieve this quality, entrepreneurs must possess entrepreneurial competencies to fall back on in order to succeed in the business.

The attribute of the entrepreneurs to succeed in business venture is known as entrepreneurship, an entrepreneurial competency is acquired through entrepreneurship education and training. Nwacukwu, (2015), note that it is through entrepreneurship education that entrepreneurial competencies are acquired. Therefore, competency is the ability of an individual to carry out certain activities or specific jobs with effectiveness.

To be competent, implies that one has acquired the knowledge, skills, attitude and judgement, which are required in order to perform successfully at a specific proficiency level in a given work (Ali, 2004). Hence, competency in the context of this work connotes the ability of technician of electrical/electronic graduates to be self-employed (repairing or creating new components) instead of waiting for a paid employment that may come or may not come. However, for technician of electrical/electronic graduates to be self-employed, it is necessary to give special attention to this area by providing those technicians with the opportunities to acquire entrepreneurial skills and competencies to become successful entrepreneurs are acquired through entrepreneurship education. Also, to succeed through entrepreneurship education, the competency required by the technician of electrical/electronic graduate must be determined. This is to determine the educator's proficiency in imparting the skills and competencies which are considered the most important ingredient of sustainable development. Sustainable development is the idea that human societies must live and meet their needs without compromising the ability of future generations to meet their own needs (Brundtland Report, 1987). Sustainable development also is a way of organising society so that it can exist in a long term, that is taking into account both the imperatives present and those of the future, such as the preservation of the environment and natural resources or social economic equity.

Competency is the ability to do something well after learning and practicing what has been learnt (Webster, 2009). Also, competence is the ability to do something well effectively and following professional standards. To be competent means that the person concerned must possess skills to carry out certain jobs or tasks to an acceptable standard.

Skills are knowledge and proficiency required in the accomplishment of engineering, scientific or any specific task (Igbojiomu, 2008). Therefore, entrepreneurial competencies by technician of electrical/electronic graduates of technical colleges in Plateau State for self-reliance



or self-employment according to the context of this work include – managerial, technical and interpersonal competencies. The competency need of graduates of vocational education, arises as a result of technology changes rising more rapidly all over the world.

Technological needs of the industries appear to grow faster than the training and improvement training programmes in the technical colleges. International labour organization (ILO, 2000) noted that this slack was as a result of lack of proper technological orientation for the graduates of electrical/electronics, lack of proper human development programmes and absence of modern facilities for training the technical college graduates to meet up with the changing needs of the industries. The changing needs of industries were necessitated by the technological changes and development growing on daily basis around the globe which is the result of changes in the demand of consumer product.

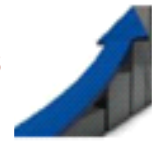
Concerted efforts should be made to train technical college graduates (electrical/electronic graduates inclusive) to enable them meet up with the current challenges in the world of work. To achieve this fit, teachers of technical colleges should be equipped adequately to become competent educators, especially in the field of entrepreneurship. A good human and sustainable development training programme for entrepreneurs should contain among others the managerial, technical and marketing competencies (Akinawo, 2020).

Management competencies involve the process of planning, organising, leading and controlling both human (personnel) and material resources in the enterprise. Technical competence is the ability of the graduates to innovate, or initiate new products or ideas, act positively and decisively with available facts to carry out specific tasks and functions to a standard. Also, interpersonal competency is the ability of the graduates to relate cordially with others in the workplace, to be open and honest in dealing with clients and customers and being able to handle situations in case of controversy.

Most of the graduates (technician) of technical colleges lack the necessary skills and competencies that would enable them become self-reliant (self-employed). The evidence is the high rate of unemployment among the graduates of technical colleges (electrical/electronic inclusive). This showed that such technician lacks relevant skills and competencies for self-employment. Therefore, it is against this backdrop that the researcher set out to determine the entrepreneurial competencies needed by technician of electrical/electronic graduates of Technical Colleges in Plateau State.

Specifically, the study was designed to determine the following:

1. The managerial competencies needed by technician of electrical/electronic graduates of Technical Colleges in Plateau State for self-employment.



2. The technical competencies needed by technician of electrical/electronic graduates of Technical Colleges in Plateau State for self-employment.
3. The interpersonal competencies needed by technician of electrical/electronic graduates of Technical Colleges in Plateau State for self-employment.

Research Questions

The following research questions were formed for the study:

1. What are the managerial competencies needed by technician of electrical/electronic graduates of technical colleges of Plateau State for self-employed?
2. What are the technical competencies needed by the technician of electrical/electronic graduates of technical colleges in Plateau State for self-employment?
3. What are the interpersonal competencies needed by technician of electrical/electronic in technical colleges in Plateau State for self-employment?

Null Hypothesis

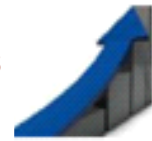
There is no significant difference in the mean ratings of self-employed technician of electrical/electronic graduates and government employed graduates of the same programme on the managerial competencies needed by such graduates for self-employment in technical colleges of Plateau State.

Methodology

The survey design was adopted because data were collected from the respondents, analysed and findings described as they are without interference. The descriptive research design was used for the study. The research design is in agreement with the definition of survey, which is a research design that merely describes events in their most naturally occurring conditions without the researcher manipulating any variable(s) involved in the investigation (Iketaku, 2011).

The area of the study was Plateau State. The population for the study comprised 45 technician of electrical/electronic graduates that are successfully self-employed and 50 graduates of the same programme that are employed in government establishments. Therefore, the total number of the population used for the study was 95 technicians of electrical/electronic graduates from technical colleges in Plateau State. There was no sampling because the population was manageable size; hence the entire population was used for the study.

Questionnaire was used as instrument for data collection which consisted of 30 items statements structured in a four-point rating scale of Most Highly Needed (MHN), Mostly Needed (MN), Slightly Needed (SN) and Not Needed (NN) with weighting values of 4, 3, 2 and 1 points



respectively. It was first validated by three experts, two from Technical Education Department, one expert from Curriculum Department both from Federal College of Education, Pankshin. The reliability of the instrument was determined by administering the instrument to three technicians of electrical/electronic graduate entrepreneurs and three government employed technician of electrical/electronic graduates in Akwa Ibom State. The data collected was analysed using Cronbach Alpha Formula to establish the reliability index which was found to be 0.88 indicating that the instrument was reliable and hence used to collect data for the study.

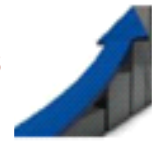
95 copies of questionnaire were distributed, completed and returned, hence representing 100% return rate. The researchers carried out the exercise with the help of two research assistants. Mean and Standard Deviation were used to answer the research questions of the study. Any item with a mean score of 2.50 and above were regarded as mostly needed while items with mean ratings below 2.50 are regarded as slightly needed. For the null hypothesis of the study, it was tested using t-test at 0.05 level of significance. Thus, the decision was that if the t-calculated is greater or equal to t-table value at 0.05 level of significance, the null hypothesis will be rejected otherwise, it will not be accepted.

Results

Research Question1: What are the managerial competencies needed by technician of electrical/electronic graduates of technical colleges of Plateau State for self-employed?

Table 1: Mean \bar{X} scores and standard deviations of the responses on managerial competencies needed by technician of electrical/electronic graduates of Technical Colleges in Plateau State for self-employment.

S/N	Managerial Competencies	\bar{X}	SD	Decision
1.	Ability to plan daily activities in the shop	3.79	0.40	Mostly Needed
2.	Ability to organize ideas and concepts related to the vocation	3.47	0.64	Mostly Needed
3.	Ability to relate cordially with co-workers and supervisors	3.71	0.47	Mostly Needed
4.	Ability to use feedback from customers and clients for improved performance	3.26	0.74	Mostly Needed
5.	Skills in time management	3.54	0.45	Mostly Needed
6.	Ability to manage human and material resources in the business	3.70	0.54	Mostly Needed
7.	Skill to set realistic business goals	3.50	0.53	Mostly Needed
8.	Determine employee remunerations	3.56	0.49	Mostly Needed
9.	Ability to keep record/inventory of materials, tools and equipment	3.82	0.35	Mostly Needed



10.	Ability to charge customers fairly on goods and services	3.68	0.53	Mostly Needed
Grand Mean & SD		3.55	0.71	

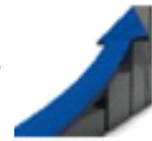
In Table 1, all the items have the mean score above the cut off mean of 2.50 showing that all the item statements in Table 1 are managerial competencies needed by technician of electrical/electronic graduates of technical colleges of Plateau State for self-employment. The grand standard deviation of 0.71 shows the degree of disparity of their responses in sum.

Research Question2: What are the technical competencies needed by the technician of electrical/electronic graduates of technical colleges in Plateau State for self-employment?

Table 2: Mean \bar{X} scores and standard deviations of the respondents on technical competencies needed by technicians of electrical/electronic graduates of technical colleges in Plateau State for self-employment.

S/N	Technical Competencies	\bar{X}	SD	Decision
11.	Ability to identify faults in electrical/electronic equipment and appliances	3.65	0.46	Mostly Needed
12.	Ability to rectify faults in appliances	2.82	0.25	Mostly Needed
13.	Ability to draw plans for domestic and industrial electrical installations	3.36	0.52	Mostly Needed
14.	Ability to select correct cable	3.70	0.45	Mostly Needed
15.	Ability to carry out industrial/ duct installations	3.50	0.50	Mostly Needed
16.	Skills in carrying out repairs in single-phase and poly-phase AC motors and generators	3.42	0.49	Mostly Needed
17.	Skill to test for continuity and earthing connections	3.46	0.56	Mostly Needed
18.	Ability to interpret electrical/electronic circuits symbols and working diagrams	3.78	0.42	Mostly Needed
19.	Ability to use DC and AC meters	3.86	0.18	Mostly Needed
20.	Ability to repair radio set and understand the operation	3.46	0.50	Mostly Needed
Grand Total		3.43	0.65	

All the items in Table 2 have their mean score above the cut off mean of 2.50 and the grand mean was 3.43. thus, it means that the technical competencies stated in the items are mostly needed by technician of electric/electronic graduates of technical colleges for self-employment.



Research Question 3: What are the interpersonal competencies needed by technician of electrical/electronic in technical colleges in Plateau State for self-employment?

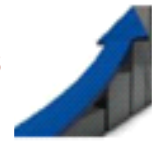
Table 3: Mean X̄ scores and standard deviations on the responses on interpersonal competencies needed by technician of electrical/electronic graduates of Technical Colleges in Plateau State for self-employment.

S/N	Interpersonal Competencies	X̄	SD	Decision
21.	Ability to listen attentively	3.25	0.51	Mostly Needed
22.	Ability to render supportive services to the employer	3.59	0.45	Mostly Needed
23.	Being honest to the employer and customer	3.72	0.38	Mostly Needed
24.	Ability to take decisions based on the available facts	3.68	0.40	Mostly Needed
25.	Being trustworthy	3.58	0.46	Mostly Needed
26.	Ability to interest with people openly and fairly	3.34	0.60	Mostly Needed
27.	To be punctual and regular at work	3.68	0.47	Mostly Needed
28.	Ability to control emotions and situations as the need arises	3.52	0.52	Mostly Needed
Grand Total		3.54	0.87	

Also, in Table 3, all the item statements have their mean scores above the cut off mean of 2.50 and a grand mean of 3.54. This shows that all the item statements in Table 3, are regarded as interpersonal competencies needed by the technician of electrical/electronic graduates of technical colleges for self-reliance or self-employment. The overall standard deviation in table 3 is 0.87 showing that there is little disparity in the responses of the respondents on interpersonal competencies needed by technician of electrical/electronic graduates of technical colleges in Plateau State for self-employment.

Null Hypothesis1: There is no significant difference in the mean ratings of self-employed technician of electrical/electronic graduates and government employed graduates of the same programme on the managerial competencies needed by such graduates for self-employment in technical colleges of Plateau State.

Table 4: t-test of difference between mean X̄ of government employed and self-employed graduates on the managerial competencies needed by technician of



electrical/electronic graduates of technical colleges in Plateau State for self-employment.

Employment status of graduates	\bar{X}	SD	N	df	t-cal	t-tab	Decision
Government employed	3.65	0.27	95	103	3.57	1.92	Rejected
Self-employed	3.51	2.23	45				

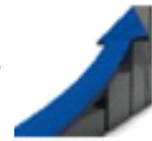
Table 4 shows that the calculated t is 3.57 and is greater than the table t of 1.92 tested at 0.05 level of significance and at 103 degree of freedom. Hence, the null hypothesis which stated that there is no significant difference in the mean ratings of self-employed and government employed technician of electrical/electronic graduates of technical colleges in Plateau State on managerial competencies needed by such graduates for self-employed is rejected. This shows that the opinions of self-employed and government employed technician of electrical/electronic graduates of technical colleges in Plateau State on the competencies they needed for self-employment differs significantly.

Discussion of Findings

Findings of the study following research question one showed that to have employable technician of electrical/electronic graduates from technical colleges in Plateau State, managerial competencies, technical competencies and interpersonal competencies must be possessed by the graduated technician. The findings concur with the statement made by Onoh (2003) that, graduates of technical college programmes must possess some degree of competencies in managerial, technical and financial accounting competencies to become successful entrepreneur. Some study like that of Akpan (2003) shows that majority of the technician of technical colleges graduates are only interested in passing their examinations and possessing certificates rather than acquiring the basic competencies required for self-employment. Hence, the present study posed the specific competencies that must be acquired by the technician of electrical/electronic graduates of Plateau State to become successful entrepreneurs.

The findings of this study also showed that entrepreneurship education is an indispensable tool for self-employment. This agrees with what Akinnawo (2020) stated that entrepreneurship education is a vital element of self-employment, which management skills are part and parcel. The study shows that those graduates who lack entrepreneurial competencies end up increasing the number of unemployed technicians while very few technicians who possessed the competencies get themselves busy on their own little way because of limited resources.

Conclusion



Based on the findings of the study, it was concluded that technician of electrical/electronic graduates needed managerial, technical, and interpersonal competencies to become self-employed in Plateau State. The competencies if well acquired by the graduates will go a long way to equip them to face the challenges of self-reliance like being able to produce goods and services of utilized value, this will enhance sustainable development. It was discovered that the inability of most of the graduates to be self-employed was as a result of non-possession of the competencies necessary for self-employment.

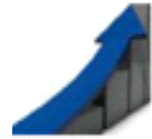
Recommendations

Based on the findings and conclusion of the study, the following recommendations were made:

1. Education authorities should create enough awareness about entrepreneurship education.
2. Adequate facilities should be provided by the government for the training of students of technology in technical colleges.
3. Entrepreneurship experts should be employed by government to teach students at all levels with the entrepreneurial competencies needed for their self-employment.

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