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APPRAISAL OF SKILLS ACQUIRED FOR GAINFUL EMPLOYMENT BY GRADUATES OF ELECTRICAL INSTALLATION TRADE OF TECHNICAL COLLEGES IN EBONYI STATE

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Abstract: ***The study aimed at determining the level of skills and job performance of graduates of electrical installation trade of technical colleges in Ebonyi State. The study was guided by two research questions that bordered on finding out practical skills acquired by graduates of technical colleges and the level of actual job performance. A descriptive research design was adopted. The population of the study consisted of 97 respondents comprising 67 technical college graduates of electrical installation trade and 30 work based supervisors in the state. Two sets of questionnaire were constructed based on practical work skills and job performance tasks within the clusters. Each of the questionnaire comprised of 30 items in the task skill areas of electrical installation. The data collected was analyzed using mean and standard deviation. The findings of` the study include among others that the graduates of electrical installation trade in technical colleges in Ebonyi State excellently acquired skills in domestic electrical installation. There was no significant difference between the mean responses of graduates and work based supervisors on graduates' job performance in electrical installation trade. Graduates also expressed moderate skills acquisition and job performance in certain aspects of electrical installation. It was recommended that the teachers should carry out a retraining for graduates that lacked skills and job performance in certain aspects of electrical installation trade work.***

Keywords: Appraisal, skills, gainful employment, graduates, electrical installation, trade.

Introduction

To foster meaningful economic development in Nigeria, it is imperative to positively relate education to effective and result oriented work by citizens. This convention is in tandem with the establishment of technical and vocational

education which aims at producing youths with practical saleable skills for fitting into productive work in the world of paid employment. This view was elaborated by the Federal Government of Nigeria (FRN, 2012) in the National Policy on Education where it was stated that technical and vocational education refers to those aspects of the educational process involving in addition to general education, the study of technologies and related sciences and the acquisition of practical skills, attitudes, understanding and knowledge relating to occupations in various sectors of economic and social life. Its objectives generally include to:

- Produce semi-skilled and technical manpower necessary to restore, revitalize, energize, operate and sustain the national economy and substantially reduce unemployment.
- Serve as a means of national defense against poverty brought about by lack of job skills.
- Reform the content of technical and vocational education to make it more responsive to the socio-economic needs of the country.
- Harmonize and inter-relate with industry and the labour market in terms of resources for training as well as production standard.
- Raise and sustain a generation of job creators rather than job seekers.
- Enhance access to technical and vocational education system

- Ensure equity of access, participation and completion rates of students of technical and vocational education.

Skills development is thus the centre pin need in vocational technical education. The basic issue concerning skills acquisition by students hinge on the fact that technical college graduates should gain academic and technical skills that afford employment and sustain their economic prowess as productive society members in the contemporary work environment – world of work. However, Ile, Asogwa and Chukwugbo (2005) noted with dismay that technical education for work places readiness and the opportunities for technical education are in dire need in the country. The reason giving credence to this assertion is the educational system's lack of adequate instructional resources content such as inadequate curricula, instruction and other support variables. Obviously, it goes as Koffel (2004) noted, that educators spend much time discussing theories, sharing knowledge, experimenting and searching for concepts; while employers of labour that hire graduates from Nigerian educational system want to see results and want their employees to be able to do something with their knowledge in practical terms. Thus employers emphasize that practical skills acquired by students for occupational expression is inadequate for good performance at work.

Grubb (2009) posited that vocational and technical education programmes are having difficulties keeping pace with technological expansion trends. Since

many workers lack the knowledge and skills in managing the new technologies, employers are not able to adequately utilize the skills of these new graduates who lack the basic practical skills. Nwokomali (2005) in line with above assertion agreed that lack of financial resources, inadequately trained technical and vocational teachers, and transparent lack of teaching resources have greatly contributed to the unprepared ness of graduates of technical colleges for the workforce and their subsequent occupational performance in the world of work. When employees perform up to expectation of employers, they are always or most often rewarded through prompt promotions and other related incentives. The performance of workers depends much on their dept of preparedness in training periods. Employers are therefore apt to employing graduates who have mastered the skills required to perform well in their primary job assignments. In spite of these exceptions, high job performers according to Moses (2015), get more easily promoted and have better career opportunities than lower performers.

Considering that the spate of unemployment in the country has reached epic proportions, it is imperative that students` should be trained to the level they will acquire saleable practical skills at the technical college level and at other vocational and technical education stages. The saleable practical skills will enable the graduates be employable or become self-reliant when no jobs could be found at government circles. Technical and vocational education should therefore be

refocused to achieve required practical training of youths. The difficulty in achieving this refocusing is not quite easy as identified by Osborn (2006) who posited that the present realities in Nigeria indicate that it will take more than mere refocusing of technical and vocational education in it's present format to make it more relevant, responsive and effective in delivering graduates with requisite skills and` training that can perform to the satisfaction of their employers. In similar vein, Okoye (2014) pointed out that the widening gap between programmes offered in technical colleges and the actual openings available in the labour market are due to mismatch between skills demanded in the work place and those provided by the schools. A clear indication of this assertion is that Nigerian employers of labour still patronize expatriate skilled personnel instead of graduates trained from the Nigerian trained technical and vocational institutions that cannot perform up to expectation like their expatriate counterparts.

Sequel to the general review of the technical and vocational education curriculum by the national board for technical education, NBTE (2007), it envisioned the need for radical reform in the sub-sector through the review and updating existing curricular in TVE to deliver the right training that will give young people appropriate knowledge and skills to satisfactorily function in their various trades and the same time be flexible enough to allow them adjust to changing demands of` the prevailing economic realities. Among the 25 TVE

programmes updated by NBTE is electrical installation trade. The federal republic of Nigeria (2004) in the new national policy on education described electrical installation as an engineering trade offered at technical college level in Nigeria, whose aim is to produce competent craftsmen with sound theoretical knowledge and practical skills that would be able to diagnose faults and carryout repairs or maintenance on all types of electrical installations, (NBTE, 2007). The content of the curriculum of electrical installation trade is divided into five modules thus: Domestics installation, industrial installation, cable jointing, battery charging, and winding of electric machines, (NBTE, 2007). The performance of graduates of this course has not be encouraging as to effectively contribute in economic development of the nation. Aliya (2009) supported this assertion noted the electrical installation and maintenance work graduates perform below expectations in their various working locations. It might be that the level of skill expected of the technical and vocational education graduates are questionable. It is pertinent to appraise the level of the practical skills required to ensure productivity in the world of work. The purpose of the study was thus to ascertain the level of skills acquired and occupational performance of graduates of electrical installation and maintenance trade of technical colleges in domestic and industrial installation in Ebonyi State technical colleges. Specifically, the research sought to determine:

(i) Level of skills acquired in domestic installation by graduates of technical colleges in Ebonyi state

(ii) Level of occupational performance` of graduates in domestic and industrial installation at the technical colleges in Ebonyi State.

Research Questions

The following research questions were posed to guide the study:

1. What is the level of skills acquired in domestic installation by the technical college graduates?
2. What is the level of occupational performance of graduates of domestic and industrial installation in technical colleges in Ebonyi State?

Methodology

The study was conducted in Ebonyi State which is one of the states in South-eastern Nigeria. The population of the research was drawn from the technical colleges in Ebonyi State comprising of electrical installation trade graduates and 30 work based supervisors working in the 13 local government areas of the state. The population of the graduates was 67 bringing this total population of the study to 97.`Population of the supervisors was extracted from their register in the` ministry of commerce and industry in the state. The researcher developed two sets of questionnaire that was used` to collect data for the study. The development of the instrument was done in line with the NVTE (2007) electrical

installation trade syllabus including other literatures relating to the study. The face validation was done by three experts in the department of` technology and vocational education, faculty of Education, Ebonyi State University. The lecturers were asked to assess the appropriateness of the questionnaire items in line with the purposes of the study and to make suggestions for the research for the instrument improvement. The inputs of the lecturers were used to re-draft the questionnaire which finally made up of 60 items inform of tasks for the clusters. The instrument was then trial tested on 10 technical college graduates and 5 work based supervisors in the Ebonyi State Ministry of works and transport. Cronbach Alpha statistic was used to determine the reliability, (r) which yielded 0.83. The study population consisted of 30 work based supervisors in the public sector and 67 electrical installation trade graduates as recorded in the directorate of labour and employment in the state. The entire population was 97, and the population was all used in the study and there was no sampling since the population size was manageable.

The first section of the questionnaire was on Electrical Installation and Maintenance Trade Graduate Skills Acquired Questionnaire (EIMTGSAQ). This was administered on the 67 technical college electrical installation graduates. The response mode were Excellently Acquired (EA) 5; Highly Acquired (HA) 4; Moderately Acquired (MA) 3, Slightly Acquired (SA) 2; and Not Acquired (NA)

1. The second section of the questionnaire elicited responses from supervisors of work place of graduates. The response scale in this section were; excellent performance (EP); High performance (HP), moderate performance (MP), Low performance (LP), and poor performance (PP); each rated: 5, 4, 3, 2 and 1 respectively. Each of the instruments 30 variables (items) in the four clusters of designated tasks, means and standard deviation for the items was calculated and used to answer the research questions.

Results

The results were presented in line with the research questions formulated to guide the study.

Research question 1: What is the level of skills acquired in domestic installation by the technical college students?

In order to answer the research question, graduates of technical colleges made responses to the questionnaire and tabulate as shown in table 1 below.

Table 1: Mean and Standard Deviation of Graduates of Electrical Installation Trade on Level of Skills Acquired in Domestic Installation

S/N	Item Ability to:	$\bar{x}$	SD	Remarks
1.	Interpret working drawings	4.83	0.97	EA
2.	Utilize scale rules to measure working electrical drawings	4.62	0.98	EA
3.	Locate accessories positions	4.71	1.03	EA
4.	Correctly list accessories required in a particular domestic installation work	4.81	1.11	EA
5.	Recognize correctly electrical symbols in drawings	4.65	1.31	EA

6.	Draw electrical symbols in domestic work	4.91	1.21	EA
7.	Demonstrate spirit level during measurement	4.79	1.20	EA
8.	Carryout simple surface wiring	4.63	1.45	EA
9.	Mount distribution fuse board correctly	4.83	0.97	EA
10.	Keep safety regulations during wiring	4.63	1.45	EA
11.	Conduct earthing correctly	4.93	1.05	EA
12.	Use of conduit pipes	4.79	1.20	EA
13.	Bend perfectly conduit pipes	3.34	0.98	EA
14.	Mount conduct accessories	4.21	0.54	EA
15.	Cut conduct pipes correctly	4.68	1.31	EA
16.	Draw in cables without excessive kinking of wires	4.81	1.11	EA
17.	Conduct polarity test after installation	4.69	0.86	EA
18.	Conduct earth insulation test	4.63	1.22	EA
19.	Conduct earth-continuity test	4.61	1.29	EA
20.	Mount conduit accessories	4.93	0.97	EA
21.	Provide effective earthing	4.71	0.87	EA
22.	Mount cooker unit perfectly	4.73	0.96	EA
23.	Identify short circuits	4.81	1.23	EA
24.	Mount earth continuity conductor	4.82	1.54	EA
25.	Mount circuit breakers	4.84	1.25	EA
26.	Mount switch gears	4.56	1.16	EA
27.	Mount change over switch	4.77	1.20	EA
28.	Inspect all types of joints	1.22	0.66	EA
29.	Mount all types of bell set	4.56	1.05	EA
30.	Demonstrate the use of test` lamp	3.56	1.05	EA

Table 1 above showed that graduates of electrical installation acquired skills in 26 out of the 30 skills in the electrical installation trade, only items 20, 23, 27 and 29 were the skills lacking in the graduates having score the means below 3.50.

Research question 2: What is the level of job performance acquired of graduates in electrical installation by the technical colleges graduates in domestic installation?

To answer the above research question, the mean and standard deviation of the ratings of graduates and supervisors on the level of job performance of graduates in domestic installation module were calculated and presented in Table 2.

Table 2: Mean and Standard Deviation of work base supervisors' responses on Level of job performance of graduate of Domestic Installation

S/N	Item Ability to:	$\bar{x}$	SD	Remarks
1.	Interpret working drawings	4.48	1.01	HP
2.	Utilize scale rules to measure working electrical drawings	4.71	0.81	HP
3.	Locate accessories of positions	3.21	0.56	HP
4.	Correctly list accessories required in a particular domestic installation work	4.63	1.45	HP
5.	Recognize correctly electrical symbols in drawings	4.83	0.97	HP
6.	Draw electrical symbols in domestic work	4.62	0.98	HP
7.	Demonstrate spirit level during measurement	4.91	1.21	HP
8.	Carryout simple surface wiring	4.81	1.11	HP
9.	Mount distribution fuse board correctly	4.21	0.54	HP
10.	Keep safety regulations during wiring	4.62	0.98	HP
11.	Conduct earthing correctly	4.91	1.20	HP
12.	Use of conduit pipes	4.03	1.45	HP
13.	Bend perfectly conduit pipes	3.34	0.54	HP
14.	Mount conduct accessories	4.81	1.11	HP
15.	Cut conduct pipes correctly	4.65	1.31	HP
16.	Draw in cables without excessive kinking of wires	4.65	1.31	HP
17.	Conduct polarity test after installation	4.69	0.86	HP
18.	Conduct earth insulation test	4.63	1.22	HP
19.	Conduct earth-continuity test	4.93	0.97	HP
20.	Mount conduit accessories	4.84	1.25	HP
21.	Provide effective earthing	4.82	1.59	HP
22.	Mount cooker unit perfectly	4.81	1.23	HP
23.	Identify short circuits	4.73	0.96	HP

24.	Mount earth continuity conductor	4.71	0.87	HP
25.	Mount circuit breakers	4.61	1.29	HP
26.	Mount switch gears	3.21	0.81	HP
27.	Mount change over switch	4.63	1.45	HP
28.	Inspect all types of joints	4.83	0.97	HP
29.	Mount all types of bell set	4.63	1.45	HP
30.	Demonstrate the use of test` lamp	4.21	0.54	HP

Table 2 above shows the level of job performance of graduates of electrical installation trade of technical colleges in domestic installation. The table revealed that the graduates exhibited good job performance in the tasks.

Table 2 above indicates the actual job performance level of graduates of electrical installation trade in domestic installation most graduates exhibited high performance level in most of the job skills mean rating values well were significantly above 3.50, while some exhibited moderately on the skills in industrial domestic installations as shown on items 13, 26 where job performance scale were 3.21, 3.34, and 3.21 respectively.

Findings of the Study

Sequel to the data collected and analyzed in the study, it was found that certain level of technical skills were acquired and job performance of graduates of electrical installation trade of technical colleges in Ebonyi State technical colleges. The study therefore unveiled that electrical installation trade graduates.

1. Highly acquired skills in domestic installation modules and this showed that graduates acquired skills on

a. Interpreting electrical working drawings;

b. Utilization of scales in determining electrical drawings;

c. Drawing of electrical symbols;

d. Keeping of safety regulations;

e. Drawing in of cables to conduit work;

2. Graduates exhibited high job performance in the following skills

(i) High performance in conducting surface wiring

(ii) High performance in conducting conduit installations

(iii) High performance in mounting gear switches.

(iv) Moderate performance in mounting electrical accessories.

Discussion of Findings

The research findings showed that graduates of technical colleges highly acquired practical skills in the colleges. These acquired skills enabled them to also perform well in practical jobs. It is likely that the equipment for training provided at the technical college workshops and the industrial attachment students are usually exposed to before graduation helped them to acquire these skills. This is in tandem with Uwaitu (2009) who reported that given the level of facilities for practical exercises in domestic installation in the nations technical colleges, it's products should perform above average. Yaduma and Moses (2005) earlier noted that the question of the skills in the modules of domestic electrical installation is

linked with the fact that the technical colleges workshops are equipped with facilities for practical exercises and the emphasis usually given to practical work by the teachers in the workshops.

On job performance of technical college electrical installation trade, showed that the graduates exhibited high job performance in most aspects of domestic and industrial installation while they moderately performed in few others. The graduates showed moderated performance only on locating positions of electrical accessories, mounting of gear switches, and conducting bends on conduit pipes, the graduates therefore demonstrated high job performance in most of the clusters of variables practical skills in domestic installation. Elobuike (1999) agreed that whenever electrical installation trade students go on students' industrial training, they are usually exposed to and gain better work experience in domestic installation. The high and moderate job performances of the graduates may as well be connected to the increase in practical contacts as provided in the revised NVTE (2007) curriculum as well as the industrial attachment the students did during their school periods of training in addition to the constant supervision by the industrial based supervisors.

Conclusion

From the findings of the research, it would be concluded that graduates of electrical installation trade of technical colleges in Ebonyi State excellently

acquired practical skills in most of the clusters in the domestic electrical installation. The graduates acquired moderate practical skills in only few areas of skills in domestic electrical installation. The graduates acquired wish job performance in most of the skill areas in domestic electrical installation trade at the technical colleges in Ebonyi State.

Recommendations

Based on the findings of the researcher; the following recommendations have be propertied.

1. Teachers of electrical installation should provide more training in areas where graduates only demonstrated moderate skills performance.
2. Government should provide adequate training facilities for the technical colleges in the state in order to re-dress the vocational skill areas where graduates were deficient.

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