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WORK-SKILL REQUIRED FOR TRAINING OF SECONDARY SCHOOL DROPOUTS IN NIGER STATE

By
Atsumbe B. N (P hD), Saba, T. M and Abdulsalam, I
Department of Industrial and Technology Education
Federal University of Technology, Minna
Niger State

ABSTRACT

The purpose of this study was to develop a work-skill required for training of secondary school dropouts in Niger State. Specifically the study was designed to develop a programme of training in domestic wiring, battery charging and repairs and winding of electrical machines adequate for making dropout students self-reliant. Three research questions were raised and three hypotheses were tested at (P< 0.05) level of significance. The population of this study comprised of 38 respondent, 28 Electrical Technical School teachers selected from all the seven technical colleges and 10 tertiary school lectures that offers training for vocational and technical teachers. The data collected from the population was analyzed using mean, standard deviation and the t-test. Based on the findings, it is recommended that the training should be replica of the training environment where the trainees would subsequently work. And adequate repetition of training in experience from the training areas should be given to the trainees. Thus, these enable the right habits of doing and thinking to the degree necessary for employment.

Introduction

Vocational training programmes have been realized as instrument for strengthening skills acquisition among the committee of nations. Developed nations attained economic stability through their consistent abilities in reinforcing all human and material resources in this regard. FGN (2004) defined vocational and technical education as a form of education involving, in addition to general education, the study of technologies and related sciences, and acquisition of practical skills, attitudes, understanding and knowledge relating to occupations in various sectors of economic and social life. Vocational and technical education is further understood to be an integral part of general education, a means of preparing for occupational field and for effective participation in the world of work, an aspect of lifelong learning, a preparation for responsible citizen and a method of facilitating poverty alleviation. The goal of vocational and technical education therefore, is to prepare an individual to be ready for work and future employment.

However, the need for trained workers has become extremely important to meet the ever changing technological demand of the society. Esene and Agbabu (1997) emphasized that no longer can persons hope to find employment in business and industries without some kind of education or training, considering the recent global financial meltdown that is facing every nation in the world today. Only jobs without opportunity for advancement or a future are available to those without adequate preparation. All worthwhile occupations require a minimal amount of training, and many demand years of planned education and skilled-developing activity (Siachino, 1997).

Okorie (2001) opined that the major aim of secondary education in Nigeria is to train one to be resourceful so that by the time of graduation they will be able to work and be useful to themselves and the society. But reverse was the case, about 60 percent of youth who are mostly secondary school leavers remained unemployed, because they lack necessary skills needed for employment. Thus, the aim of secondary education is to provide primary school leavers the opportunity of proceeding their education to enable them to be useful to themselves and society at large. Thomson, (1995) also defined dropout as someone who leaves his or her job, school, college without completing it. Dropout has been psychologically used to describe the young leavers that prematurely dropout of the school system due to one reason or the other, which the study aims at their rehabilitation.

Education in Nigeria is an instrument par-excellence, which according to Fafunwa (1974) is the aggregate of all processes by which a child or young adult develops the abilities, attitudes and other forms of behaviours which are of positive value to the society in which he lives. From the above definition, it is clear that, education is a life-long process through which an individual develops all his capabilities and becomes useful to him, his fellow being and thus develops the society in which he belongs.

The neglect of vocational technical education is socially and economically injurious because it is robbing the nation the contributions the graduates would make on national development Esene and Agbabu, 1997). It is no longer news that the nation's youth unemployment rate has been shooting up the sky. The federal government recently acknowledged that about 80 per cent of Nigeria's youths are unemployed and 10 per cent underemployed. It has vastly been documented that more than 80 per cent of Nigerians live on less than one dollar per day. There should be some form of school-work-based learning incorporated in schools in Nigeria as integral part of national development strategy (Ronald, 2006). Empowering the people with technical skills would enhance their productivity and national development. Nigeria's poverty alleviation programs have been ineffective because of lack of skills training facilities and social services. Giving money to the poor who cannot manage their own lives to set up small business is like pouring water in a bucket with holes.

In fact, the worth of every worker depends on the person's skills and knowledge, and not on the stack of academic degrees one has. Nigeria must learn to blend theory and practice in its education because theories alone cannot serve any useful purpose. The nation's technical schools should be brought to international standard by employing teachers with field experience in the subject areas and experienced and professional administrators to run technical institutions.

It cannot be overemphasized that technical education is the engine for economic growth. No nation can fight a war without an army. In the same token Nigeria cannot develop without well-equipped technical and vocational institutions. In fact, it is the missing link in Nigeria's development policy (Ronald, 2006). Because of poor training and ineffective institutions Nigeria suffers from low productivity. But the progress of any society lies in the productivity of its citizens. Higher productivity gives a nation advantage of economies of scale and lowers the costs of production and prices of goods and services. Nigeria should begin now to take very seriously investment in education

and skill training as no nation can compete effectively in the emerging global market place with poorly educated and unskilled workers. The leading factors of production in the emerging global economy are said to be technology, knowledge, creativity and innovation. It is upon this that it is pertinent to develop an Electrical vocational programme to train secondary school dropout in Niger State. This is due to the tremendous role the State is playing in the National electrification project, in order to train dropout students within this state with Electrical skills to enable them service, maintain and repair basic electrical appliances and installations to salvage this state from loosing this set of youths who are dropping out of schools to any form of anti-social vises.

Vocational education (formal or informal) and job training program has been an integral part of national development strategies in many societies because of its impact on human resource development, productivity, and economic growth. Despite its proven contribution, the public and private sectors in Niger state does not seem to give this aspect of training the attention it deserves; and it appears one of the reasons for the rising unemployment and poverty in the state. The increasing rate of unemployment and poverty has been recently linked to dropouts in the secondary school system and According to Awwal (2006), school dropout does nothing but moves the yearning of any society backward and therefore befalls individual potential". Hence the act of delinquency such as robbery, crime, stealing and gambling becomes the other of the day among this set of youths. But despite several Government intervention in fighting poverty and youth restiveness among schools dropouts (National Poverty Eradication programme (NAPEP) and Youth Empowerment Scheme (YES)), little progress seems to have been made due to the poor feedback mechanism that were put in place to evaluate the long term performances of these programmes. It is also documented by Awwal (2006) that many of the graduates of these programmes end up selling out their tools and equipments and go back to the street.

Research Questions

1. What are the training needs for secondary school dropout students in domestic wiring?
2. What training contents would be required in "Battery charging and repairs" adequate for making these trainees self-sufficient?
3. What basic training contents would be contained in "winding of electrical machine" which could facilitate productivity among these trainees?

Hypothesis

H01: there is no significant difference between the responses of technical colleges' teachers in electrical option and electrical lecturers in tertiary institution towards the training needs of dropout students in domestic wiring.

H02: there is no significant difference on the required training contents in battery charging and repairs among the two categories of respondents.

H03: there is no significant difference between the responses of the two sets of respondents towards the basic training content to be use in winding of electrical machine

Methodology

The method employed in this research work

is a descriptive survey research design. Thus, a descriptive survey is the one that involves the collection of data, organize it, analyses it and describe them as they exist naturally. This study covers all the seven technical colleges in Niger State and the two tertiary institutions that offer vocational and technical training of teacher in Niger state. The population for the study comprises of 28 electrical technical teachers in all the seven technical colleges in Niger state and 10 Lecturers in Industrial and Technology Education, Electrical option in Federal University of Technology, Minna, and Electrical Department in College of Education Minna.

The questionnaire was administered by the researchers by visiting the seven technical colleges and the two tertiary institutions that offer training in vocational and technical related courses. This is to ensure adequate collection of data that was distributed among teachers and lecturers. The data for the study were analyzed by using the mean, standard deviation and t-test; a four (4) point's scale was developed using strongly agreed, agreed, disagreed, and strongly disagreed.

Table 1: ***Mean, Standard D eviation and t-test Analysis of Respondents Regarding the Training Needs for Secondary School Dropout Students in Domestic Wiring.***

N1 = 28, N2 = 10

S/no	ITEMS	X_1	X_2	$S.D_1$	$S.D_2$	t	REMARK
1	General analysis of Electrical working diagrams.	3.54	3.90	0.50	0.30	0.21	Accept
2	Identification of symbols used in electrical drawing of an electrical wiring.	3.58	3.90	0.50	0.30	0.19	Accept
3.	Interpretation of scale used in working drawing.	3.15	3.50	0.92	0.50	0.09	Accept
4.	Location of the position of various accessories on a drawing.	3.43	3.70	0.57	0.65	0.11	Accept
5.	Identification of all electrical accessories required for a job from the working drawing.	3.33	3.30	0.76	0.46	0.01	Accept
6.	Interpretation of the distribution system from a drawing.	3.54	3.50	0.50	0.50	0.02	Accept
7.	General analysis of Domestic surface wiring.	3.25	3.20	0.44	0.40	0.02	Accept
8.	Stating the statutory regulations regarding surface wiring and safety.	3.58	3.30	0.57	0.46	0.12	Accept
9.	Identification of cable types and sizes used in various areas in surface wiring.	3.04	3.60	0.63	0.92	0.16	Accept
10.	Interpretation of cable rating, maximum load demand and ambient temperature.	3.43	3.70	0.50	0.46	0.13	Accept
11.	Identification of tools and instrument used in surface wiring.	3.54	3.80	0.50	0.40	0.14	Accept

12.	Fixing cable to a surface board.	3.18	3.30	0.61	0.46	0.04	Accept
13.	Using brass nail and clip to hold on cable.	3.65	3.90	0.48	0.3	0.17	Accept
14.	Using plumb line, chalk line and spirit level to maintain straight line of cable.	3.47	3.30	0.50	0.46	0.07	Accept
15.	Simple practical surface wiring of a domestic building using appropriate tools and material.	3.54	3.45	0.50	0.50	0.04	Accept
16.	The appropriate procedure for preparing conduit installation.	3.65	3.30	0.48	0.46	0.18	Accept
17.	Determining the set and bend permissible radial length of a conduit pipe.	3.54	3.10	0.50	0.84	0.16	Accept
18.	Identification of the types of conduit pipes and wire for carrying out conduit works.	3.90	2.90	0.31	0.95	0.57	Accept

Key: N1 = Number of teachers , N2 = Number of lecturers , X1 = Mean of teachers , X2 = Mean of lecturers, SD1 = standard deviation of teachers, SD2 = standard deviation of lecturers

t = t-test analysis of the respondents

The items raised in research questions were rated agreed and analysis of table (t), revealed that the calculated t value of each item does not equal or exceed the t-critical value of 1.96 necessary for rejection of hypothesis at ($P<0.05$) level of confidence. Hence hypothesis I was accepted. This indicates that there was no significant deference between the mean responses of the teacher and lecturer with regards to the training needs for secondary school dropout students in domestic wiring.

Table 2 : ***Mean, Standard D eviation, and t-test Analysis of the Respondents Regarding the Training Contents Required in Battery Charging and Repair Necessary for Making these Trainees Self-sufficient.***

S/no	ITEMS	X_1	X_2	$S.D_1$	$S.D_2$	t	REMARK
		N1 = 28, N2 = 10					
19	Working principles of cell and the constructional feature of a battery.	3.25	3.20	0.44	0.40	0.02	Accept
20	Identification of the types of cells (primary and secondary)	3.58	3.30	0.57	0.46	0.12	Accept
21	Interpretation of the working principle of primary and secondary cells.	3.54	3.90	0.50	0.30	0.21	Accept
22	Identification of the various parts of cells	3.58	3.90	0.50	0.30	0.19	Accept
23	Construction of a simple cell.	3.15	3.50	0.92	0.50	0.09	Accept
25	Maintaining, repairing and charging of batteries.	3.43	3.70	0.57	0.65	0.11	Accept
26	Identification of the materials, equipment and tools used for battery charging.	3.33	3.30	0.76	0.46	0.01	Accept
27	Preparation of the condition suitable for battery charging.	3.54	3.50	0.50	0.50	0.02	Accept
28	Preparation of electrolyte by observ ing necessary precaution	3.25	3.20	0.44	0.40	0.02	Accept
29	Identification of various methods of charging battery e.g. constant voltage, constant current float charging, trickle charging systems.	3.58	3.30	0.57	0.46	0.12	Accept
30	Demonstration of co nnection of cells (primary and secondary cells).	3.04	3.60	0.63	0.92	0.16	Accept
31	Construction of a simple battery	3.43	3.70	0.50	0.46	0.13	Accept
32	Installation /connection of batteries for charging system e.g. series and parallel connections.	3.54	3.80	0.50	0.40	0.14	Accept
33	Preparation of electrolyte for battery used.	3.22	3.40	0.49	0.49	0.07	Accept
34	Connection of battery for trickle, float equalizing charges etc.	3.75	3.20	0.44	0.60	0.30	Accept

The analysis of table (5), revealed that the calculated T value of each item does not equal or exceed the t-critical value of 1.96 necessary for rejection of hypothesis at ($P<0.05$) level of confidence. Hence hypothesis II was accepted. This indicates that there was no significant deference between the mean responses of the teacher and lecturer with regards to the training contents required in "Battery charging and repair" necessary for making these trainees self-sufficient.

Table 3 : ***Mean, S tandard D eviation a nd t -test Analysis of the Respondents Regarding the Basic Training Contents to be Contained in Winding of Electrical Machine which can Facilitate Productivity among the Trainees.***

N1 = 28, N2 = 10

S/no	ITEMS	X_1	X_2	$S.D_1$	$S.D_2$	t	REMARK
35	Concept and applicat ion of all statutory regulations during electrical winding work.	3.50	3.60	0.50	0.49	0.05	Accept
36	Application of general safety and precautions in an electrical workshop.	3.72	3.70	0.46	0.46	0.01	Accept
37	Identification of appropriate tools equipm ent used for winding jobs.	3.54	3.45	0.50	0.50	0.04	Accept
38	Acquisition of skills for preparation and interpretation of winding drawing.	3.61	3.80	0.49	0.40	0.11	Accept
39	Preparation and interpretation of simple wave winding drawings.	3.47	3.40	0.50	0.67	0.03	Accept
40	Preparation and interpretation of lap winding drawings.	3.61	3.90	0.49	0.30	0.19	Accept
41	Determination of coil span per pitch, per phase, per pole.	3.75	3.40	0.44	0.49	0.21	Accept
42	Position of coil ends on commutator / s lip ring for fixed brush in a developed winding diagram.	3.65	3.30	0.48	0.46	0.18	Accept
43	Acquisition of skills for dismantling machines for rewinding work	3.54	3.10	0.50	0.84	0.16	Accept
44	Recording of the necessary data from name plate.	3.90	2.90	0.31	0.95	0.57	Accept
45	Identification of burnt static/rotating machines by applying standard measures.	3.61	3.50	0.49	0.50	0.06	Accept
46	Identification of that types of conductors used in winding.	3.40	3.30	0.49	0.46	0.04	Accept
47	Identification winding insulation material.	3.11	3.30	0.31	0.46	0.10	Accept
48	Preparation of winding former for rewinding work.	3.86	3.50	0.35	0.50	0.30	Accept
49	Preparation of winding coil.	3.68	3.90	0.47	0.30	0.16	Accept

The analysis of table (3), revealed that the calculated t value of each item does not equal or exceed the t-critical value of 1.96 necessary for rejection of hypothesis at ($P<0.05$) level of confidence. Hence hypothesis III was accepted. This indicates that there was no significant deference between the mean responses of the teacher and lecturer with regards to the basic training contents to be contained in winding of electrical machine which can facilitate productivity among the trainees.

Findings

1. Findings related to the training needs for secondary school dropout students in domestic wiring.
   i. General analysis of Electrical working diagrams.
   ii. General analysis of Domestic surface wiring.
   iii. Stating the statutory regulations regarding surface wiring and safety.
   iv. General analysis of Domestic conduit wiring.
2. Findings related to the training contents required in "Battery charging and repair" adequate for making these trainees self-sufficient.
   i. Working principles of cell and the constructional feature of a battery.
   ii. Preparation of electrolyte by observing necessary precaution
   iii. Identification of various methods of charging a battery e.g. constant voltage, constant current float charging, trickle charging systems.
   iv. Construction of a simple battery
3. Findings related to the basic training contents to be contained in winding of electrical machine which can facilitate productivity among the trainees.
   i. Concept and application of all statutory regulations during electrical winding work.
   ii. Application of general safety and precautions in an electrical workshop.
   iii. Acquisition of skills for dismantling machines for rewinding work
   iv. Identification of that types of conductors used in winding.

Discussion of the Findings

Domestic wiring is the practical act of installation, repair and maintenance of residential electrical; appliances, equipments, components, for the purpose of meeting customers need. The result obtained from table one (1) and its hypothesis indicated that, it is very important to include analysis of electrical working diagram (drafting) in the training needs of dropout students. NBTE (2003) National curriculum for Electrical installation and maintenance practice shows from its position as the first course of instruction to be taught. The elements of this instruction include; identification of symbols in electrical installation, interpretation of scale used in working drawing, location of the position of various accessories and so on. This is also supported in the training contents of Able Skill (2009), complete Electrical package on Domestic installation as the second course of instruction to be taught after safety legislation, regulation standard, and terminology.

However the need for training secondary schools dropouts in surface and conduit wiring in Niger state cannot be over emphasized. This is because, these types wiring system are mostly been employed in domestic houses. No wander most vocational training centers like Life Skill training package, able skills training programme and many others, deemed training of desirable individual in this profession. It is however noted that, the high rate of building construction in Nigeria and particularly in Niger State are economical promising to electrical personnel. This is in accordance with the study of (Ojebode, 2004).

In designing any vocational training programmes, it is necessary that adequate orientation should be given in statutory safety regulation. NBTE (2003) National curriculum for electrical installation and maintenance practice emphasized and adopt safety and IEE regulation in any practice in domestic wiring. Therefore, in meeting the training needs of trainees in any vocational training programme, adequate repetition of skills and knowledge must be given to stimulate effective competence. Adequate repetition of training in experience from the occupation enables the right habits of doing and thinking to the degree necessary for employment". It can also be noticed that the curriculum of general education in Nigeria permits repetition of instruction, which means that the contents are emphasizing a particular learning experience to be taught. It is also believed that secondary schools dropouts are seen to be growing into their adolescent stages which imply that many of them may have been losing their focus at these stages for reason on individual life experience.

The result obtained in table 2 appeared to be positive. Thus the finding showed necessary safety precaution that must be observed before embarking on charging a battery. And Hypothesis regarding this issue from its t-cal value was (0.02) indicating that significant different was not made among the two groups of respondents regarding the above item. This is in consonant with the study of Theraja (2001) which said that safety precaution in the practice of battery charging is of primary area of education in vocational occupation. Identifying training needs in battery charging and repair to meet the need of individual and that of the society, training must be geared towards developing the affective and psycho motive learning experiences of the learners regarding this course of study. In this sense, it can be seen from the study that the principle, theories and law that guided the operation of cell/battery are very important to meet a desired training objective. Therefore the working principle of cell and the constructional features of battery as shown from its hypothesis indicated the need for principle of their operation.

The result obtained, revealed that the average mean responds of respondents are above 2.50. Indicating that the need to include winding of electrical machine into areas of training for dropout students. It should be noted however that the concept and application of all statutory regulation during the winding works are in agreement to all other training areas like domestic wiring and battery charging, this only in its logical sense signified the importance of safety regulation regarding any electrical vocational occupation. Dismantling electrical machines for effective maintenance, repair and refurbishing purpose is an operation that requires adequate skill and systematic approach. Burnt coils are needed to be replaced in appropriate numbers to enhance effective and efficient operation of electrical machines and thus actual gauge of impregnated conductor be maintained which is mostly copper. Oria (2004) who noted that, in winding of any electrical machine, coil be replace in actual numbers and gauge. Walter (2007) affirmed that, quality conformance must be ascertained and conformed to name plate standard. This would go a long way to allow trainees withstand challenges in the competitive world of work.

Conclusion

Vocational education and training have been realized as the engine for economic development (Walter, 2007). The state can only achieved it visions if special attention be given to education and technological growth, promotion and rewarding creativities and channeled its human and materials to productive uses. Hence the government must recognize the relevance of vocational skill trainings especially among the youths. It can be realized that in spite of other training areas in electrical occupations, dropout would meet need in domestic installation, battery charging and repair and in winding of machines which could make them contribute their own quota to the economy than being a problem the society.

Recommendations

In line with the findings the following recommendations were made;

1. Government should look inward and proffer adequate techniques for preventing dropout students in the society by first looking into the cause of the problems in the school system.
2. In developing vocational training programme like this, the training environment should be replica of the environment of the later life where the trainees will subsequently work.
3. Adequate repetitive of training in experience from the occupation should be given because enables the right habits of doing and thinking to the degree necessary for employment.
4. The instructors of the training programme should himself be a master of the skills and knowledge he teachers.
5. The training programme should be carried out in the same way as in the occupation itself.

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