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Assessment of Non-Formal Apprenticeship System of Electrical/Electronics Trades for the Realization of Nigeria's Vision 2020

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Abstract

The study was designed to investigate; the current state of non-formal apprenticeship system of electrical/electronics trades and ways of revamping the system. A 25 – item questionnaire was used to collect data from 60 trainers and 120 trainees of non-formal apprenticeship system of electrical/electronics trades of Niger State. Means, standard deviation and t-test analysis of independent sample were used to analyze the data. Some of the findings include; Trainers do not undergo skill development training, Trainees are involved in domestic activities, workshops are not accredited and there should be co-operation between apprenticeship system and technical colleges. It was recommended among others that: Re-training should be organized for trainers by the government, industries and non governmental organization and trainees should not be used as domestic servants.

Introduction

Non-formal apprenticeship system is as old as man, this form of apprenticeship existed even before the coming of colonial masters and missionaries that champion western education which is also known as formal education in Nigeria. The pre-historic man learnt by imitation, through imitation he learnt to provide food, shelter, clothing pottery and complements such as hoe, cutlasses, knife e.t.c. Umoh and Nkuma (2003) noted that the traditional Nigeria societies adopted the method on the job training as well as apprenticeship system in the transmission of vocational skills. By apprenticeship system, the young had to learn under the master craftsmen for some period of time to acquire the needed skills for job performance. Okolo (2006) opined that, apprenticeship was a method which is common in Nigeria before the establishment of a vocational and technical institution. The non-formal apprenticeship system which is old system of skill development has produce the bulk of semi-skilled workforce in electrical installation, electronics, auto-mechanics, refrigerator and air conditioning, woodworking, generator servicing e.t.c. The apprenticeship according to Encyclopedia Americana (1972) in Okorie (2000) is a procedure by which young person acquire skills necessary to be proficient in a trade, craft, under the tutelage of a master practitioner for number of years.

The ultimate aim of non-formal apprenticeship system is the acquisition of skills. Mogaji (1998) viewed a skill as an activity involving knowledge, judgment accuracy and usually manual dexterity, all which are acquired as a result of long training and practice. Acquiring psychomotor skills in the field of electrical/electronics practice have significant important to the national development and economic growth. The apprenticeship in electrical and electronics trades has the unique responsibility of

equipping an individual for effective participation in the society. Technicians and craftsmen in the field of electrical/electronics ought to be well trained to interpret electrical circuits, detect faults and correct it. The electronics circuits are complex and the changes in electronics industries are rapidly. Therefore, there is need for constant development of master craftsmen and technicians to enable them content with the technological development and also to be able to transfer appropriate skills to trainees.

Mercer (1979) in Okorie and Ezeji (1988) averred that the skills acquired through apprenticeship system are useful to society in the following ways:

- The skilled acquired provide financial and psychological security to the trainees after graduation.
- The master trainer receives productive work from apprentices during their training.
- The society at large, receives continuous supplies of skilled labour and quality goods.

Statement of the Problem

Discoveries and development of science and technology are made almost everyday. Electrical/electronics play a major role in our daily life. The electrical/electronics gadgets and equipment that uses electricity can be found in both urban and rural household. The gadget amongst others includes radios, mobile phones, televisions, computers, refrigerators, air conditionings, electric motors, fan, and electrical cookers. The service producing business provided useful labour that results in a need or want being satisfied. The services include installation, maintenance, repair and update of electronics system. As Nigeria opted for technological development the electrical and electronics gadgets and equipment ought to be maintained to prolong the lifespan and to prevent them from sudden breakdown. Raymond (2007) opined that technology development in electronics equipment has brought changes in the field of electronics servicing which the roadside technicians or craftsmen have to contend with. Okorie and Ezeji (1988) opted that the technological changes in all occupation call for a review and re-evaluation of our training effort. Hence, the need to assess the non-formal apprenticeship system of electrical and electronics trades in Niger State for realization of vision 2020.

Research Question

This study sought answers to the following research questions.

1. What is the current state of non-formal apprenticeship system to electrical/electronics trades in Niger State?
2. What are the ways of revamping the non-formal apprenticeship system of electrical/electronics trades in Niger State?

Hypotheses

The following hypotheses were tested in the study at .05 level of significance:

1. There is no significance difference between the mean ratings of trainers and trainees on the current state of non-formal apprenticeship system of electrical/electronics trades in Niger State.

2. There is no significance difference between the mean ratings of trainers and trainees on ways of revamping the non-formal apprenticeship system of electrical/electronics trades in Niger State

Methodology

The study is on assessment of non-formal apprenticeship system of electrical/electronics trades in Niger State. A survey research design was employed in the study. The population of the study comprised of all the trainers and trainees of non-formal apprenticeship system of electrical and electronics trades in Niger State. Stratified random sampling was adopted to select 60 trainers and 120 trainees in the three zones of Niger State.

A 25 items questionnaire was used as an instrument for data collection. A four point scale of Strongly Agree = 4, Agree = 3, Disagree = 2, and Strongly Disagree = 1, was utilized. The data collected was analyzed using mean, standard deviation and t-test. The cut-off point of mean was fixed at 2.50. Therefore, any item that rated a mean score of 2.50 and above was considered as agreed, while any item that rated a mean below 2.50 was regarded as disagreed. For the hypotheses testing the t-value was 1.96 at $P < 0.05$ level of significant any item that has it calculated t equal or less than t-value was considered accepted while the item that has it calculated t more than t-value was considered rejected.

Table 1: Mean, Standard Deviation and t-test of Trainers and Trainees on Current State of Non-formal Apprenticeship System of Electrical/Electronics Trades in Niger State

S/No	Item	$N_1 = 60;$		$N_2 = 120$		SD ₁	SD ₂	t	Remarks
		\bar{X}_1	\bar{X}_2	\bar{X}_1	\bar{X}_2				
1	There is good relationship between trainers and trainees	3.21	3.31	3.26	1.12	1.21	-0.436	Accepted	
2	The trainers usually undergo skill development training	2.21	2.14	2.31	0.87	0.98	0.521	"	
3	There is relevant curriculum used for training	2.03	2.15	2.09	0.91	0.78	0.421	"	
4	The instructions proceed for simple to complex	2.28	2.06	2.16	0.89	0.77	1.02	"	
5	Trainees are also involved in domestic activities	2.56	2.86	2.71	1.31	1.21	-1.381	"	
6	Workshops are equipped with modern equipment	2.56	2.1	2.37	1.09	1.23	1.560	"	
7	Apprentices are taught the cause of problem before correcting it	2.56	2.47	2.49	0.38	0.81	0.472	"	
8	Apprentices are taught safety precautions in electrical shop	3.52	3.20	3.36	0.88	0.92	0.923	"	
9	The trainees received theoretical knowledge of electrical/electronics	2.01	1.84	1.93	1.32	1.08	1.470	"	
10	There is co-operation between non-formal apprenticeship system and technical institutions	1.84	2.02	1.93	0.98	1.07	-1.20	"	
11	Children of less than 15years are usually employed as apprentice	3.23	3.45	3.34	0.37	0.69	1.101	"	
12	Workshops are usually accredited before admission of trainees	1.80	1.94	1.87	0.97	0.84	0.968	"	
13	The graduation is based on examination	2.56	2.61	2.59	0.72	0.93	0.724	"	
14	The apprenticeship programme is been supervised by government	1.92	1.87	1.90	0.58	0.89	0.876	"	

Keys:-

\bar{X}_1 = Mean of Trainers

\bar{X}_2 = Mean of Trainees

N_1 = Number of Trainers

N_2 = Number of Trainees

t = t-test of Trainers and Trainees

SD₁ = Standard Deviation of Trainers
SD₂ = Standard Deviation of Trainees

\bar{X}_1 = Average Mean

The analysis in table 1 revealed that the respondents agreed to item 1, 8, 11 and 13 and disagreed with other items. The all items fails in rejecting the hypothesis meaning that there is no significant difference in the mean rating of trainers and trainees on current state of non-formal apprenticeship system of electrical/electronics trades in Niger State.

Table 2: Mean, Standard Deviation and t-test of Trainers and Trainees on Ways to Revamping the Non-formal Apprenticeship System of Electrical/Electronics Trades in Niger State

S/No	Item	N ₁ = 60;		N ₂ = 120		t	Remarks	
		\bar{X}_1	\bar{X}_2	\bar{X}_1	SD ₁			SD ₂
15	Government and non governmental organization should organized retraining programme for trainer timely	3.61	3.38	3.50	1.20	1.11	0.824	Accepted
16	The workshop should be accredited before the trainers are allowed to accept apprentice	2.67	2.71	2.69	0.82	0.78	-0.328	"
17	The minimum age of apprenticeship should be 15 years	3.01	3.18	3.10	0.54	0.38	0.245	"
18	Master trainers should be given interest free loan to equip their workshop	3.81	3.69	3.75	1.23	1.04	1.042	"
19	There should be co-operation between non-formal apprenticeship and technical institutions	3.68	3.46	3.57	0.78	0.90	0.982	"
20	Trainers should be subjected to examination before graduation	3.11	2.81	2.96	0.38	0.89	1.381	"
21	There should be constant supervision of the programme by the government	2.68	2.71	2.70	0.54	0.38	-1.002	"
22	Trainers should ensure the method of instruction is from simple to complex	2.61	2.81	2.46	1.34	1.07	-1.450	"
23	Trainees should not be involved in domestic activities	2.36	3.61	2.99	0.84	0.57	-2.082	Rejected
24	There should be cordial relationship between trainers and trainees	3.14	3.10	3.12	0.72	0.54	0.236	Accepted
25	Trainers should be taught the cause of problem before correcting it	3.16	3.21	3.19	0.82	0.57	-0.868	"

co-operation between non-formal apprenticeship system and technical institution that contributed to deficiency in theoretical. Ezema (1999), Olateju (2001) and Okoro (2006) lamented that the apprentices are told what to do but not why they have to do it in the way specified because of lack of theoretical content that attributed to why they are unable to deal with situations which are not exactly like the one they have experienced before. The apprentices are also used as domestic servant that causes lack of concentration on the work they came to learn.

The findings also revealed that government and NGO's should collaborate and retrained the trainers. Adeyemi (1999) in his recommendations stressed the need of re-training of trainers so that they can be up to task in their field. The workshops should be accredited to meet the minimum standard and which also includes supervision of the training programmes. Ndom (1999) and Olateju (2001) in their recommendations emphasized the accreditation of the workshops to meet the requirement and constant supervision of programme to know what kind of skills they are imparting on the apprentices. From the finding it also agreed that there should be co-operation between the non-formal apprenticeship and technical institution. Okoro (2006) agreed to this, which he further said that the apprenticeship system in Nigeria will be more effective if some form of co-operation can be worked out to enable the apprentices received the theoretical training in the technical colleges.

Recommendations

Based on the findings the following recommendations are made:-

1. The workshop use for training the apprentices should be accredited by the relevant ministry before allowing apprenticeship system and also there should be constant monitoring of the training apprentices received.
2. Since technology is not static but dynamic the master trainers should be re-trained timely by the government, industries and NGO's to disallow them graduate half-baked apprentice which may latter become hindrance to technology development.
3. A formal of co-operative should be formed between non-formal apprenticeship system and technical colleges as technical instructors can remedy the lack of theoretical content in the training programme of apprentices by given them periodic lectures.
4. The government, industries or NGO's should assist the master trainers with interest free loan to enable them equipped their workshop with modern equipment.
5. There should be a rule by the government that no any apprentice be used as domestic servant and that will help them concentrate on the work they came to learn.

Conclusions

It has become cleared that electrical/electronics artisans or technicians roles cannot be over emphasized, because of their significant roles they play in servicing/repairing and installation of electrical/electronics gadgets and equipment. This self-employed artisans or technicians that keep the country's wheel of progress on the move are the

The analysis of table 2 revealed that the respondents agreed to all items. The item 23 rejected the hypothesis meaning that there is significant difference in the mean rating of trainers and trainees. While it fails to reject hypotheses of other items meaning that there is no significant difference in the mean rating of trainers and trainees on ways to revamp the non-formal apprenticeship system of electrical/electronics trades in Niger State.

Major Findings

Base on the data collected and analyzed, the following findings were made.

1. Current state of non-formal apprenticeship system of electrical/electronics trades in Niger State.

- There is good relationship between trainers and trainees.
- Trainers do not undergo skill development training.
- The instructions are not systematic.
- Trainees are involved in domestic activities
- There is no co-operation between non-formal apprenticeship and technical institutions.
- Workshops are not accredited
- Apprenticeship programmes lacks theoretical contents.

2. Ways to revamp the non-formal apprenticeship system of electrical/electronics trades in Niger State.

- Government and non-governmental organization (NGO) should collaborate and organized re-training for trainers.
- Workshops should be accredited by the government.
- The minimum age of apprentice should be 15 years.
- The trainers should be given interest free loan by the government.
- There should be cooperation between non-formal apprenticeship and technical institutions.
- There should be constant supervision of apprenticeship programmes by the government.
- Method of instructions should be from simple to complex.

Discuss of Major Findings

The study revealed that there is good relationship between trainers and trainees, good relationship help the learners to have good concentration on the work more-over, since the training is through imitation. The trainer does not undergo skill development training. This is not coming as surprised because many of roadside technicians practice trial and error. Raymond (2007) supported this, saying that the roadside technicians lacks professional advancement, that make many of the technicians could not cope with development in the electronics industries. It is also noted that instructions are not systematic the newly apprentice start learning from the work his master have in hand. The mode of training has no curriculum. Okorie and Ezeji (1988) and Adeyemi (1999) noted that the apprenticeship system lacks any organized or structured course contents. The learning is limited to what the master trainers knows or on what is brought to the workshop for services/repairs, the training programmes are not universal. There is no

product of non-formal apprenticeship system. And as the Nigeria desired to become one of the largest economic by the year 2020. There is a great need for government, industries and concerned citizens to enhance the development of non-formal apprenticeship system in our country, Nigeria.

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