

Constraints Affecting Electronics Servicing of Roadside Technicians in Minna Metropolis.

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Abstract

The need for roadside electronics technicians to improve upon their occupational efficiency in order to contribute maximally to the overall technological development of the nation is imperative. These technicians are however, contending with constraints that have seriously limited their chances of achieving this goal. Therefore, the study was designed to find out the constraints affecting effective electronics servicing of roadside technicians. The study was conducted in Minna metropolis. A twenty-three items structured questionnaire was used to collect data from 63 electronics technicians. Mean and Standard Deviation statistics were used to analyze the data. The results from the study revealed that lack of adequate formal education, information about electronics trade and professional advancement and lack of electronics testing equipments and facilities were the major constraints of the roadside technicians.

Introduction:

Technical and vocational education is about work and training for work. It is an instrument for national development. One of the goals of technical and vocational education as stated in the National Policy on Education (2004) is to give training and impart the necessary skills to individuals who shall be self-reliant. If this goal is adequately achieved, it would lead to a sustainable technological development which Nigeria as a nation is yearning for. Technicians in Nigeria who are self-reliant and gainfully employed are playing a crucial role in this quest for technological development.

Technicians are people, who possess skills and technical knowledge about a trade and uses this knowledge and skills to construct, operate and maintain machinery and equipment. Osuala (2004) conceptualized technicians as workers whose job requires both the knowledge and use of scientific and mathematical theory; specialized education or training in some aspect of technology or science. Therefore, a technician is a skillful and competent person who can perform with high degree of expertise the work in a given trade.

Technicians in the field of electronics are involved in electronic servicing of a wide range of electronics equipments and systems. Electronic servicing according to Loveway (1995) is a process which is concerned with the detection, location and repairs of faults as they occur in electron system. It there means that when an electronic fault occurs in an electronic equipment, a technician is expected to detect, locate and rectify the fault.

Technological development in electronic equipment has brought about changes in the field of electronics servicing which roadside technicians have to contend with. Roadside technicians, in this situation, refers to all the technicians in the field of electronics that are self-employed and are practicing. The need for these technicians to improve upon their occupational efficiency can not be over emphasized since the whole world is fast becoming a global village and technology advancement is spreading.

However, visits to most of these roadside electronic technicians at their place of work revealed poor working conditions which have resulted into occupational inefficiency. Evidence from literature suggests that most of them are operating in dilapidated structures and residential apartment as workshops. It was as result of this that the study was conceived to investigate the constraints of the roadside technicians in electronics servicing.

Statement of the problem

The roadside electronic technicians in Niger State forms part of the bulk of Nigeria's skilled and semiskilled workers contributing to the technology development of the country. However the State of these technicians leaves much to be desired. For instance, it takes most of them longer time than necessary to diagnose an electronic fault, and in most cases after the repair of an electronic appliance has been completed, all the initial symptoms are not completely removed and or new symptoms may develop which will result into unsatisfactory performance of the appliance. The goal of being a self-reliant nation as stated in the National Policy on Education may not be achieved with this situation on ground. As at now, the cause of this situation is not quite clear. Therefore, the problem talked by this study is what are the constraints affecting electronics servicing of the roadside technicians in Minna metropolis with a view to suggest modalities to avert the anomalies?

Purpose of the study.

The purpose of this study was to determine the constraints affecting electronic servicing of roadside technicians. Specifically, the study to determined:

1. Constraints affecting electronics servicing of roadside technicians in Minna metropolis
2. Modalities to be adopted to remove these constraints.

Research Questions

In order to achieve the objective of the study, the following research questions were raised to guide the study.

1. What are the constraints affecting electronics servicing of roadside technician in Mina metropolis?
2. What are the modalities to be adopted to remove these constraints?

Methodology:

The study was carried out in Minna metropolis. A survey research design was employed in the study. The population of the study comprised of all electronics roadside technicians in Minna metropolis. 63 respondents were randomly selected and used for the study. A 23-item structured questionnaire developed by the researcher and content, validated by two experts in technical 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 and Standard Deviation. The cut off point to accept or reject an item was fixed at 2.45. Therefore, any item that receives a mean score of 2.45 and above was regarded as agreed while any item below 2.45 was regarded as Disagree.

Results**Research question 1:**

what are the constraints affecting electronic servicing of roadside technicians in Minna metropolis?

Table 1

Constraints Affecting Electronic Servicing of Roadside Technicians in Minna Metropolis

S/NO.	Item Description	\bar{X}	SD	Remark
1.	The roadside Electronic technicians do not have suitable Workplace	3.55	0.95	Agree
2.	The roadside Electronic technicians have inadequate formal education	3.33	0.78	Agree
3.	Roadside Electronic technicians lack necessary testing equipment to enable them diagnose faults easily	3.04	1.01	Agree
4.	Electronic technicians at the roadside do not have adequate skills in the use of testing equipment	2.21	1.00	Disagree
5.	Roadside electronic Technicians do not posses adequate skill in the use of hand tool	1.97	1.09	Disagree
6.	Roadside technicians have inadequate skills in electronic fault detection and rectification	2.92	1.04	Agree
7.	Inadequate attention is accorded roadside technicians by government	2.85	1.09	Agree
8.	There is no regular power supply for technicians do their work	2.97	1.07	Agree
9.	There is no adequate information about professional advancement opportunities of the roadside electronic technicians.	3.21	0.97	Agree
10.	The roadside technicians lack access to adequate Information on current trend in Electronic trade	3.21	0.89	Agree
11.	There is no provision for on - the - job training for roadside technicians	2.66	1.02	Agree
12.	Roadside technicians are not financially strong enough to procure most of the needed equipment in their trade	3.23	0.82	Agree
13.	Roadside technicians have inadequate knowledge of general safety rules in the Electricity and electronic	2.90	1.00	Agree

14.	Roadside technicians have inadequate knowledge of normal operation of Electronics system	2.71	1.19	Agree
15	The roadside technicians do not have enough knowledge about technology of electronic components	2.85	0.89	Agree

The data in Table 1 show that the respondents agreed with items 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, and 15 as constraints affecting electronics servicing of roadside technicians. These items had means above the cutoff of 2.45 and above ranging from 2.66 to 3.35 and standard deviation ranging from 0.78 to 1.19; thus indicating that the roadside technicians were close to one another in their opinions and they were not far from the mean. Respondents disagreed with items 4 and 5 with means of 2.21 & 1.97 and standard deviation of 1.00 & 1.09 respectively.

Research question 2:

What are the modalities to be adopted to remove the constraints affecting effective electronics servicing of roadside technicians?

Table 2

Modalities to be Adopted to Remove the Constraints Affecting Effective Electronics Servicing of Roadside Technicians.

S/No	Item Description	\bar{x}	SD	Remark
16	Existing adult education centers should be made more effective and be used to improve skills and knowledge of the roadside technicians	3.11	0.94	Agree
17	Roadside electronics technicians should pursue further training obtainable in institutions of higher learning to improve their knowledge and skills	3.30	0.84	Agree
18	Government should established guidance and information centers to supply information about various trades and professional advancement opportunities to the roadside electronics technicians	2.90	1.16	Agree
19	Seminars, workshop and exhibition of electronics tools and equipment should be organized by vocational education institutions and roadside technicians should be invited to take part.	2.64	1.14	Agree
20	Non-governmental organizations in the state should assist in the training and re-training of all eligible electronics roadside technicians	2.80	0.99	Agree
21	Non-governmental organizations in the State should help provide equipment and facilities for electronics roadside technicians on loan.	3.40	0.85	Agree

22	Government should adequately provide interest free loans for roadside technicians through the National Poverty Eradication Programme. (NAPEP)	3.11	0.91	Agree
23	Roadside electronics technicians should form co-operative groups to enable them contribute money for their progress and also take loans from Banks.	3.16	1.01	Agree

Table 2 revealed that the respondents agreed with all the items identified as modalities to be adopted to remove the constraints affecting effective electronics servicing of roadside technicians. These items have means above the cut off of 2.45 and scores ranging from 2.64 to 3.40 and their standard deviation from 0.84 to 1.16; thus indicating that the respondents were close to one another in the opinions.

Findings:

Based on the data collected and analyzed, the following findings were made:

1. Constraints affecting effective electronics servicing of roadside technicians include:
 - a. The roadside electronics technicians have inadequate formal education.
 - b. Roadside technicians have inadequate skills in electronics faults detection and rectification.
 - c. Inadequate attention is accorded roadside technicians by government.
 - d. There is no regular power supply for technicians to do their work.
 - e. There is no adequate information about professional advancement opportunities of the roadside electronics technicians.
 - f. The roadside technicians lack access to adequate information on current trends in electronic trade.
 - g. Roadside technicians are not financially strong enough to procure most of the needed equipment in their trade.
 - h. Roadside technicians have inadequate knowledge of general safety rules in electronics.
 - i. Roadside technicians have inadequate knowledge of normal operation of electronics systems.
2. Modalities to be adopted to remove these constraints are:
 - a. Existing adult education centers should be made more effective and be used to improve skill and knowledge of the roadside technicians
 - b. Roadside electronics technicians should pursue further training obtainable in institutions of higher learning to improve their knowledge and skills.
 - c. Government should establish guidance and information centers to supply

information about various trades and professional advancement opportunities to the electronics technicians.

- d. Non - governmental organizations in the state should help provide equipment and infrastructural facilities for electronics roadside technicians on loan.
- e. Government should adequately provide interest - free loans for roadside technicians through the National Poverty Eradication Programme (NAPEP).
- f. Roadside electronics technicians should form cooperative groups to enable them contribute money for their progress and also take loans from Banks.

Discussion

This study revealed that lack of adequate formal education, information about electronics trade and professional advancement and lack of electronic testing equipments and facilities are the major constraints affecting the electronic servicing of roadside technicians. This condition has made these technicians to employ the "trial and error" method to detect electronic faults which usually take longer time than necessary and in some cases they are unsuccessful. The findings are in agreement with the views of Tokheim (1999) who stressed that the lack of adequate testing equipments, information and continuing education can adversely affect any technical occupation.

With reference to the modalities to be adopted in order to remedy the identified constraints, this study revealed in Table 2 that though the respondents agreed with all the modalities posed to them, they rated the provision of equipment and facilities on loan by non - governmental organizations high. This is not unconnected with the fact that test equipment and facilities are of great importance in electronics servicing. Commenting on the need for availability of testing equipment and facilities for successful electronic servicing, Beer (1999) emphasized that the necessary tools and testing equipment must not only be available but electronics technicians should have adequate knowledge of how to use them.

Conclusion:

It has been revealed that due to lack of electronic testing equipment and inadequate formal education, the roadside electronic technicians always employ the "trial and error" method in electronics servicing, as a result, the whole process of faults diagnosis use to take them longer time than necessary and in some cases unsuccessful. It is therefore, expected that the inhibiting factors should be adequately addressed by all those concerned in order for roadside technicians to improve upon their occupational efficiency and be truly self-reliant.

Recommendations

Based on the findings of the study, the following recommendations wer made:

1. Roadside electronics technicians should pursue further training obtainable in institutions of higher learning to improve their knowledge and skills.
2. Government should established guidance and information centers to supply information about various trades and professional advancement opportunities to

the electronics technicians.

- 3 Existing adult education centers should be made more effective and be used to improve skills and knowledge of the roadside technicians
- 4 Roadside electronics technicians should form co-operative groups to enable them contribute money for their progress and also take loans from Banks

References

- Bear, N. (1999). *Servicing Audio and Hi-Fi Equipment*. Great Britain: Bath press.
- Bukar, B. (2000) Electronics faults and Electronics servicing: An overview. *Technical Education Today*, 10, (1&2), 66-72
- Chevrolet, T. (1992) *Electrical diagnosis and wiring diagrams*. USA: General Motors corporation
- Federal Republic of Nigeria. (2004) *National Policy on Education*. Lagos: NERDC press
- Gronemam, C.H. (1992) *Understanding electronics*. New York: McGraw-Hill co, Inc.
- Lewis, R. (1975). *Electronics Systems or Radio Television and Electronics Mechnak*. great Britain: The Macmillan press Limited
- Loveway G.C. (1995). *Electronics testing and fault diagnose*. England: Cheston Agency Ltd.
- Osuala, E.C. (2004) *Foundation of vocational education*. Enugu: Cheston Agency Ltd.
- Tokheim, R.L. (1999). *Digital electronics: principles and Applications*. New York: McGraw-Hill Companies Inc.