
MODALITIES FOR ENHANCING MODE OF TRAINING METALWORK CRAFTSMEN IN APPRENTICESHIP PRACTICE IN EDO STATE

BY

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Abstract

This study was designed to identify the modalities for enhancing mode of training roadside metalwork craftsmen in apprenticeship practice in Edo State. The concepts and enhancement of apprenticeship practice in roadside metal work practice as an aspect of non-formal vocational education were stated. The study sought answers to a research question and tested a hypothesis. The population of the study consisted of 890 metalwork craftsmen operating in the roadside apprenticeship practice in Edo State. Fifty percent (50%) of the population representing 446 metalwork craftsmen were sampled. Fifteen (15) items questionnaire tagged "Enhancement on Mode of Training Metalwork Craftsmen in Roadside Apprenticeship Practice Questionnaire" (EMTMCAPO), was used for data collection. The instrument was validated by two experts in the Department of Vocational and Technical Education, University of Benin, Benin City. The reliability coefficient was determined using Cronbach Alpha. The instrument yielded a reliability coefficient of 0.81. Frequency counts, percentages, mean and standard deviation and t-test were used to answer the research questions while t-test was used in testing the hypothesis at 0.05 level of significance. The study identified some modalities for enhancing the mode of training craftsmen in metalwork apprenticeship practice. The modalities identified among others include, the Provision of compulsory common training programmes for craftsmen and organizing workshops/seminar for craftsmen on how to read documents correctly. Government should build and equip service oriented model metal workshop in some strategic places in Edo State purposely to update the mode of training craftsmen. It was recommended that the identified enhancement measures in this study should be urgently embarked upon.

Background to the Study

Apprenticeship is a contractual agreement undertaken by a master craftsman and an apprentice whereby the apprentice is trained in a prescribed work process through practical experience under the supervision of the master craftsman. It is a form of workplace learning, which enables the apprentice to have on-the-job training. An apprentice makes his/her career choice decision to the best of his/her ability, either through the advice of those who practice the trade or through interest in the type of work involved in the trade. Apprenticeship was one of the first types of education available to youths. It was informal but useful. (Uwameiye and Iyamu 2006).

Apprenticeship practice in roadside metalwork is a training programme that encompasses the cognitive and psychomotor activities. It is a practice whereby an individual is actively concerned with the practical acquisition of skill for effective service. However, the acquisition of skill in apprenticeship practice is relatively dependent on the modes of training the apprentice which are rudimentary practices employed by master craftsman in the adequate training of the apprentice. The mode of training according to Uwameiye and Ehizogie

(2008) who stated that there was no structured curriculum for training the indigenous apprentice in apprenticeship practice. They stressed that the procedure followed in the training of apprentice is dependent on the work at a given period of time. The mode of training refers to the way craftsmen carry out their training procedure to achieve a well competent apprentice. The mode of training in roadside metalwork apprenticeship is through observation which has to do with having an adequate look at what the master craftsman is doing or performing at a particular time and keeping track of what is being observed.

Flippo (1990) refers to training as an act of increasing the knowledge and skill of an employee so that he/she can do a job better. Seeing training this way restricts its composition to knowledge and skill. This definition, however, goes a step further than other because it links on how knowledge and skills are imparted and, to some extent, some factors which influence the training process. Nadler (2000) sees training as the systematic development of attitude, knowledge and skill behaviour pattern required by an individual in order to adequately perform his current task or job.

In Edo State towns and cities such as Benin, Auchi, Ekpoma, Ehor and Uromi, apprenticeship practice consisting of different trades are found in built workshops and stores in houses used as workshops. Different trades such as metal work, woodwork, electrical/electronics work, tailoring, mechanic works, hairdressing are practiced. The trade usually has a sole owner known as master craftsman. These master craftsmen are specialists in the different trades and they render services to individuals who are in need of such services. The master craftsmen employ young men, who are interested in learning their trades, as apprentices. These apprentices usually have written or verbal agreements with their master craftsmen on their terms of training. These terms of training, usually include among other things, the period of training, cost of training, accommodation during training periods, terms of disengagement after full training, guarantor for apprentice good conduct during training, working rules and other regulations. Master craftsmen competencies are usually assessed by individuals, judging with the number of patronage they received from their customers. High patronage indicates, high competency and vice versa.

Roadside apprenticeship in metalwork practices includes welding and fabrication, Auto body works, and metal turning practices. Welding/fabrication is that aspect of metalwork which deals with the application of heat in melting two parent materials which melt and fuses into each other and thereby becomes one piece. Autobody work on the other hand, is the use of heat in joining sheet metal plate in the construction and reconstruction of components, especially the auto vehicle body. Autobody repairers are responsible for restoring the structural integrity of damaged vehicles during the repair process. This generally involves cutting away damaged metal components and welding in new or recycled replacement components. Precise work is critical to restore the vehicle to its pre-damaged condition. Autobody work is one of the components embedded in metalwork technology (FGN 2004; P:21). Metal turning practices employ the use of machine tools in reducing metal materials to various shapes and sizes. However, roadside apprenticeship practitioners usually have limited or no knowledge on the use of science related areas of metals. The detailed science of metals is inherent in the behaviour of its properties as it transforms from one state to another in the application of heat. Welding/fabrication and auto body works stand out as the major practice which transforms metal properties as carried out on the road side.

The problems associated with the acquisition of practical and theoretical skills of the craftsmen in metalwork roadside apprenticeship practice are

enormous. Kent and Mushi (1995) noted that the problems of craftsmen range from their mode of training, to the technical and management skills which they possess. They also identified among other problems, the inadequacy and use of tools and equipment and lack of Government encouragement in favourable policies to assist them to operate efficiently and effectively. Hence, emphasis is on welding/fabrication and autobody work practices on road side which therefore needs enhancement. The on-the-job performances of people involved in roadside metalwork apprenticeship is very low, hence their competencies are usually doubted (Alio, 2004). They are trained using non-formal system of education otherwise referred to as roadside apprenticeship practice. They need some improvements in their science based knowledge, in order to improve their level of skill. The simple basic science that supports the workability of a simple machine or equipment in its fabrication and construction is often not taught. The science that compliments the practice of the use of metals' tools and equipment are often not learnt and utilized in roadside apprenticeship practice.

Low competency level of skill of craftsmen trained under the apprenticeship system often causes the craftsmen to have poorly constructed works. The competencies of these craftsmen are usually doubted owing to their characteristics and mode of training which are not standardized. Okorie and Ezeji (1999) asserted that the system of the operation of craftsmen in the non-formal sector is relatively haphazard and their maintenance and repair work is done through trial and error. The trial and error method being used by the craftsmen in the non-formal sector is a wasteful method because it may lead to further damages of the equipments, machines and materials.

Technological advancement has introduced construction and fabrication challenges in metalwork technology education in recent times. These challenges are seen in the invention and production of new equipment needed to explore man's environment. Such equipment includes communication equipment, information processing, entertainment equipment, industry and automation. The introduction of these equipment calls for the development of competent skilled labour force effectively trained for efficient performance.

Statement of the Problem

Roadside apprenticeship practice in metalwork supplements manpower production for the economy because it enables its recipients to be self employed and reliant. It is currently witnessing rapid expansion in recent time, and is helping to alleviate the problem of unemployment. However, most of the apprentices trained under the system may have low competency

skills in the use of metalwork Tools and equipment and scientific knowledge needed to operate as master craftsmen in metalwork industry (Alio, 2004). It is therefore necessary to identify modalities for improving apprenticeship practice in Edo State, so that it can better serve the technological needs of Nigeria.

Purpose of the Study

The main purpose of this study was to identify modalities for enhancing mode of training apprenticeship in Edo State.

Research Question

The following research question was stated to guide this study.

What are the modalities for enhancing the mode of training of apprentices in roadside metalwork apprenticeship practice in Edo State?

Hypotheses

The following null hypotheses was formulated and tested at 0.05 level of significance.

There is no significant difference in the mean responses of auto body workers and welders on the modalities for enhancing the mode of training of apprentices in metalwork apprenticeship practice in Edo State.

Scope of the Study

This study is restricted to identification of modalities for enhancing mode of training craftsmen in roadside

apprenticeship practice as part of metalwork technology in Edo State, with emphasis on welding/fabrication and autobody works, which form the major aspect of roadside apprenticeship practice.

Significance of the Study

The findings of the study will be of immense benefit to government, policy makers, administrators, researchers, roadside metalwork apprenticeship union and master craftsmen in Edo State. It will help to enhance the training processes of metalwork master craftsmen and their apprentices. It will also equip the master craftsmen and apprentices with the problems, prospects and ways of improving on the teaching and learning processes of the apprenticeship practices in roadside metalwork technology.

Methodology

Research Design

The research design adopted for this study was the descriptive survey. The study involves the collection of data from a sample of the entire population of metalwork craftsmen in the roadside apprenticeship practice, in informal sector of the economy of Edo State.

Population of the Study

The population consists of 890 roadside metalwork craftsmen, who exclusively were welders and auto body workers, who own and render services in workshop and are recognized by their Local Government Authority in the three senatorial districts of Edo state, as shown in Table 1.

Table 1: Distribution of population and sample for the study

S/N	Major Towns	Population			Sample		
		Welder	Autobody Workers	Total Population	Welder	Autobody Workers	Total Sample
1	Auchi	82	51	133	41	26	67
2	Ekpoma	90	85	175	45	43	88
3	Benin City	320	262	582	160	131	291
	Total	492	398	890	246	200	446

Population Source: Local Government Authority (Auchi, Ekpoma, Benin City)

Sample and Sampling Technique

The sample of this study consisted of 446 roadside metalwork craftsmen drawn from three major towns in the three senatorial districts of Edo State. Stratified random sampling technique was used to select the sample, with 50 percent sample selected as follows: 67 craftsmen from Auchi in Edo North Senatorial District, 88 craftsmen from Ekpoma in Edo Central Senatorial District, 291 craftsmen from Benin in Edo South Senatorial District.

Instrument for Data Collection

The instrument for data collection was the questionnaire and was developed by the researcher; the title of the questionnaire is "Enhancement on Mode of Training Metalwork Craftsmen in Roadside Apprenticeship Practice Questionnaire" (EMTRMAPQ).

The questionnaire for the study contains 15 items structured to elicit information on modalities for enhancing the mode of training craftsmen in metalwork apprenticeship practice in Edo State.

The questionnaires was structured to have a four point rating scale of; strongly Agree (SA) 4, Agree (A) = 3, Disagree (D) = 2, Strongly Disagree (SD) = 1

Validation of the Instrument

The instrument for the study was subjected to face validation by two experts. The validates' criticism, advice and suggestions form part that guided the restructuring of the instrument.

Reliability of the Instrument

The reliability of the instrument was established using Cronbach Alpha. Thirty copies of the questionnaire were administered to roadside metalwork craftsmen, (15 each from welding and auto body work), in the informal sector of the economy of Ehor town in Uhumwonde Local Government Area of Edo State. Ehor town was chosen because; it has the same level and pattern of work organization like the other towns in Edo State. The data collected were subjected to Cronbach Alpha and a reliability coefficient = 0.81 was obtained.

Method of Data Collection

In administering the instrument for this study, the researcher personally visited the various training centres selected for the study. Subjects who are educated were given enough time to indicate their responses and return the questionnaire. However, for the subjects who were not educated or who do not possess sufficient literacy to be able to read, the items were read to them and their responses recorded. A total of 374 questionnaires, representing 83.85 percent were returned after due completion.

Method of Data Analysis

Data collected were analyzed using mean and standard deviation and t-test. The data for this study are presented and analyzed based on the research question and hypothesis that guided the study.

Result**Research Question**

What are the modalities for enhancing the mode of training apprentices in roadside metalwork apprenticeship practice in Edo State?

Table 2: Mean Ratings and Standard Deviation on the Modalities for Enhancing Mode of Training for raftsmen in Metalwork Apprenticeship Practice in Edo State?

S/N	Modalities for Enhancing the Mode of Training	x	SD	Remark
1.	Provision of compulsory common training Programmes for the craftsmen	3.51	0.61	Agree
2.	Retraining of Craftsmen to demonstrate good knowledge of grammar	3.13	0.75	Agree
3.	Enforcing mandatory workshop standards for the craftsmen	3.41	0.70	Agree
4.	Provision of professional courses for master craftsmen	3.25	0.75	Agree
5.	Organizing workshops/seminars for craftsmen on how to read documents correctly	3.44	0.65	Agree
6.	Attachment of workshops to vocational training schools/technical colleges	3.46	0.71	Agree
7.	Organizing workshops/seminars for craftsmen on good oral communication	3.18	0.75	Agree
8.	Enforcing Compulsory Certification for Craftsmen	3.01	0.81	Agree
9.	Introduction of incentives linked to part-time programme for the craftsmen	3.04	0.72	Agree
10.	The existence of vocational improvement should be given more publicity	3.28	0.76	Agree
11.	Metalwork Craftsmen should be encouraged to enroll for evening courses in technical colleges within their locality.	3.03	0.75	Agree
12.	Metalwork craftsmen should be encouraged to include metal work technology workshops/seminar in the union activities	3.13	0.75	Agree
13.	Metalwork equipment dealers/manufacturer should be made to organize regular workshop for the craftsmen	3.26	0.73	Agree
14.	Ministry of labour and productivity should insist on routine examination for the Craftsmen	3.10	0.72	Agree
15.	The National Directorate of Employment (NDE) should always organize workshops on entrepreneurship education for the craftsmen.	3.34	0.73	Agree
Grand Mean		3.23	0.72	Agree

Table 2, shows that respondents agreed on the 15 modalities identified for enhancing the mode of training craftsmen in metalwork apprenticeship practice in Edo State. The mean responses for items 1-15 are above 2.50. The table shows that item 1 has the highest mean score of 3.51 while item 8 have the lowest mean score of 3.01.

The respondents were consistent in their opinion regarding the modalities for enhancing the mode of training apprentices in the roadside metal work

apprenticeship practice in Edo State. The calculated grand mean for all the items was 3.23 while the grand standard deviation for all the item was 0.72. This showed consensus of opinion by the respondents.

Hypothesis

There is no significant difference in the mean responses of auto-body workers and welders on the modalities for enhancing the mode of training

craftsmen in metalwork apprenticeship practice in Edo State.

Table 3: The t-test of Mean responses of Autobody Workers and welders on the modalities for Enhancing the mode of training of craftsmen in Metalwork Apprenticeship Practice in Edo State.

Metal work specialty	N	Mean (\bar{x})	Standard Deviation(SD)	Difference between t Mean	t
Autobody Workers	159	48.76	5.70	0.22	.416*
Welders	215	48.54	4.65		

*Not Significant at $P > 0.05$

Table 3 presents the t-test analysis of the data generated from the comparison of the mean responses of the autobody workers and welders on the mode of training craftsmen in metalwork apprenticeship practice in Edo State. Results in the table shows that the calculated t - value of 0.416 is less than the critical t-value of 1.96 with 372 degrees of freedom at alpha level of 0.05. The null hypothesis is accepted at p greater than the alpha level. So the hypothesis which stated that there is no significance difference in the mean responses of autobody workers and welders on the modalities for enhancing the mode of training craftsmen in metalwork apprenticeship practice in Edo State was therefore retained.

Findings

On the basis of the data collected and analyzed, the following major findings were made on the Modalities for enhancing the Mode of training roadside metalwork craftsmen

- Provision of compulsory common training programmes for the craftsmen.
- Attachment of workshops to vocational training schools/technical colleges.
- Organizing workshops/seminars for craftsmen on how to read documents correctly.
- There was no significant difference between autobody workers and welders on the modalities for enhancing mode of training craftsmen in roadside metalwork apprenticeship practice in Edo State.

Discussion of Findings

The study reveals that metalwork craftsmen in roadside apprenticeship practice agreed with all the modalities for enhancing the mode of training apprentices in metalwork technology. This is an indication that those modalities are good enough for enhancing the mode of training craftsmen. Provision of compulsory common training programme for metalwork craftsmen (highest rated) is in line Operaugo (1993) who posited that organizing a common training programme assist the craftsmen to improve on a common standard to improve their skills. The study further stressed that the provision of

a common training programme provides metalwork craftsmen with necessary information and professional guidelines. Good modalities to equip the craftsmen with common compulsory training to enable them have adequate knowledge to be more effective in their training.

The study found out that there was no significant difference in the modalities for enhancing the mode of training craftsmen in roadside metalwork technology. This revealed that opinions of the craftsmen in each of these trades (autobody works and welding) did not differ with respect to their mode of training apprentices. This could be explained by stating that autobody works and welding are both metalwork practices and are also considered as part of this research under the roadside apprenticeship practice you should also relate this to findings by other authors.

Conclusions

Based on the findings of this study, the following conclusions were drawn. Roadside metalwork craftsmen operating in Edo State need more educational qualification. Most of them received their training through apprenticeship system. They lack the theoretical competencies for training apprentices; they also lack good oral communication and knowledge of grammar. They cannot also read documents correctly. They also lack the scientific repairs process. The modalities identified for enhancing mode of training metalwork apprenticeship practice in Edo state are considered important and adequate when implemented for enhancing mode of training.

Recommendations

The following recommendations have been made based on the findings of the study:

- Craftsmen in roadside metalwork apprenticeship practice should be retrained to improve, update and broaden their knowledge and skills.
- Government should establish in strategic locations in the state services oriented model metal workshops purposely to update the skills and knowledge of metalwork craftsmen. Government should further stress as part of its

- policies that an individual must attain the Junior Secondary School Year Three before been allowed to learn a trade. This will enhance their level of knowledge in some basic science needed to explore adequately in their trade.
3. Non-Governmental organization (NGO) should establish centres to retrain craftsmen in roadside metalwork apprenticeship practice. This is to enhance their level of knowledge about their trades.
 4. Craftsmen in roadside metalwork apprenticeship practice should attend a short duration workshops or seminar to improve their skills and knowledge.
 5. Government should ensure that all metal workshops in roadside metalwork apprenticeship practice possess the basic and adequate tools and equipment, necessary for effective and efficient operation.
 6. Routine assessment on the technical and management skills of craftsmen in metalwork roadside apprenticeship practice should be enforced.

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