

RETRAINING NEEDS OF MOTOR VEHICLE MECHANICS TEACHERS AT TECHNICAL COLLEGE LEVEL

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ABSTRACT

The study is designed to identify the areas of retraining needed by Motor Vehicle Mechanics (MVM) teachers in technical colleges in Niger State and Federal Capital Territory (FCT) Abuja, Nigeria. Two research questions were used to guide in the conduct of the study. The teachers of MVM program in the technical colleges in Niger State and FCT Abuja Nigeria constitute the respondents of the study. A 35 item questionnaire was used to collect data for the study. The data was analyzed using mean and standard deviation. The analysis of the data revealed that MVM teachers in the technical colleges need retraining in terms of pedagogical skills as well as practical skills areas in MVM. The competencies and skills that the teachers are supposed to acquire through retraining are expected to produce a positive impact on teaching/learning in the classroom and the schools workshops; leading to the production of graduates who can be productive and become gainfully employed or become self-reliant; thereby contributing to the development of the society and the nation at large.

Keywords: *Retraining Needs, Motor Vehicle Mechanics Teachers, Technical College.*

1 INTRODUCTION

Motor Vehicle Mechanic (MVM) work is one of the Technical Vocational Education (TVE) programs which involves the acquisition of scientific knowledge in design, selection of materials, construction, operation and maintenance of motor vehicles. According to Doyin (2004) MVM is a vocational education program, which is aimed at preparing one for a specific occupation. Vocational programs are generally designed to prepare individuals for a gainful employment as semi-skilled or skilled worker or technicians or sub-professional in recognized occupation and in new emerging occupations or to prepare individual for enrolment in advanced technical education program (Ugwaja, 2010). Motor vehicle mechanics work at technical college level consists of three components/subjects grouping as follows: Service station mechanics work, Engine maintenance and refurbishing, and Auto electricity. The program of MVM work in Nigeria technical colleges is designed to produce competent motor vehicle craftsmen for Nigeria technical and industrial development (Aruku, 2007). Therefore, teachers teaching MVM at technical college level must acquire the right skills to impart to the learners in order for them to acquire the right skills for gainful employment.

However, the objective of MVM work is to enable graduates to test, diagnose, service and repair any fault relating to conventional motor vehicle main assembly units and system to the manufacturers specification (NBTE, 2001). MAET (2005) stressed that motor vehicle mechanic students need the following attributes: an interest in mechanical/electronic system in motor vehicle, good problem solving ability, good vision, hearing and sense of smell, manual dexterity and mechanical aptitude, ability to communicate well in English, physical fitness and strength, ability to drive a range of vehicles, ability to read technical diagrams and illustration, have concern for safety and responsible work attitude; and in keeping up to date with technology. According to Abdulkadir and Olaitan (2011) teachers teaching MVM work should equip the technical students with necessary theoretical knowledge and practical skills that will enable them secure paid employment, be able to set up their workshops and be self-employed and even employ others. It necessarily follows that teachers who actually implement the curriculum of technical colleges ought to be well prepared.

Crews and Dickerson (1997) seriously noted that teachers' quality is a strong predictor of student's quality. More so, that it is widely acknowledged that no educational system can rise above the quality of its teachers". There is therefore great doubt as to the adequacy of MVM teachers, in terms of quality, now handling the subject in our various technical colleges. The committees of the Federal Republic of Nigeria (FRN, 2004) observed that the present crops of teachers teaching MVM in the technical colleges are grossly incompetent and incapable of imparting knowledge and skills efficiently and effectively to the learners. Some recent studies carried out in the area of teacher quality for the technical colleges and secondary schools in some states of the federation indicate negative disposition (Nduanya, 2006, Okeke, 2008).

1.1 The Need for the Retraining of MVM Teachers in Technical Colleges

Retraining is defined as upgrading of existing skills or acquiring a new one. The teachers of MVM program in the schools should be retrained periodically in to improve their performance and knowledge especially to make the students acquire the needed skills during teaching and learning session. The training and retraining of MVM teachers in the technical colleges is as vital as training of the industrial worker. The training should be a continuous process. Training is not something that is done to new employees only, but is used continuously in every well-ran organization. The training and retraining therefore, involves the acquisition of special skills and evidence of learning is manifested through the successful performance of these skills acquired. Teachers of MVM program in the technical colleges must therefore keep abreast with the new technological development and must keep on learning and acquiring new skills in order to be able to demonstrate knowledge and new skills to their students. Their training should not be confined to the class work or workshops alone, but engaged in conducting intensive research on local technologies.

The Technical Vocational Education (TVE) institutions especially technical colleges must provide its workers with the quickest possible methods at its disposal to be able to function effectively on the job. The training and retraining of teachers should provide them with skills and change of attitude to work, thereby improving their efficiency and productivity. Haruna (1991) defined training and retraining as those activities which are designed to improve performance on the job, the employee is presently doing or being hired to do. Training can also be visualized as the acquisition of knowledge, skills techniques, attitudes and experiences which enable an individual to make effective contribution to the combined effort of a team in the service delivery. The need for basic knowledge and skills needed for the roles the teachers would play in the teaching learning process is of vital concerned of the technical college, if the technical institution is to survive. Training and retraining prepares the employee or individual worker such as MVM teachers to fit in, in the specific role they are expected to play. Training is the process of imparting specific skills which will equip the individual or group of people to perform specific jobs effectively, efficiently and diligently for effective and efficient training programs, training facilities must be provided for both the trainees. Training and retraining programs should expose the MVM teachers to the necessary facilities they have to work with in their fields. All institutions involved in the training of teachers should be adequately equipped. Technology education institutions have to be well equipped with gadgets, resources and materials essential for use in the classrooms and workshops.

The ever changing role of the teachers, especially MVM teachers, demands professional teachers not only in name but also in training and status in the society. Goro (2000) stated that teachers must be provided with and have access to the necessary technological equipment training and resources that will result in enriched students learning. The teachers in training therefore, need quite a good number of infrastructure and educational facilities like machines, tools, equipment and books. Teachers need to be provided with good recreational facilities for their physical mental and social developmental growth. The Federal Republic of Nigeria (FRN, 2004) acknowledges that no education system can be better than the teachers who operate it. So to get good quality technology education teachers, the personnel operating it must be well trained to be able to impart same to the students. Isa

(1997) further stressed that a teacher who is occupationally qualified and competent in their subject areas can contribute immensely to the success of educational programs in their areas of specialization. Therefore, technology education needs qualified and good teachers or instructors to be able to achieve the programs desired objective.

2 STATEMENT OF THE PROBLEM

The technical teachers have complex role and have more demands on them in order to be able to impart knowledge and skills to the students. Therefore, the teachers need to acquire new knowledge, skills and attitudes for them to function effectively on the job. One of the major challenges facing TVE today in Nigeria is that most of the technical teachers especially MVM teachers are incompetent (Udofia, Etal., 2012). It is also the belief of many educators that pre-service training of teachers is not sufficient to prepare teachers for life (Okobia, 2013). It has been argued that only through the growth of training and retraining that the gap between advancing knowledge and practice can be bridged. It was on the basis of this that the FRN in the National Policy on Education (FRN, 2004) emphasized that re-training of teachers shall be developed as an integral part of continuing teacher education and shall also take care of all inadequacies. The acceptance of such responsibility by the government is a right step to ensure effectiveness and quality teaching and learning. However, quality education depends on the quality of the teachers. Re-training of teachers ensures that the teachers are kept up to date and adequately empowered to provide effective teaching and learning to the students. The pre-service training, might not perfectly prepare them for effective job performance. Therefore many reasonable teachers sought the opportunity of retraining as a means of further professional development. It is against this background that this study was aimed at determining re-training needs of MVM teachers at technical college level in Niger State and FCT Abuja, Nigeria.

3 PURPOSE OF THE STUDY

The main purpose of the study was to identify the re-training needs of motor vehicle mechanics teachers at technical college level. Specifically, the study sought to identify:

1. The re-training needs of motor vehicle mechanics teachers with respect to pedagogical skills
2. The re-training needs of motor vehicle mechanics teachers with respect to practical skills.

3.1 Research Questions

1. What are the retraining needs of motor vehicle mechanics teachers with respect to pedagogical skills?
2. What are the retraining needs of motor vehicle mechanics teachers with respect to practical skills?

4 METHODOLOGY

The study adopted a descriptive survey research design to elicit information from MVM teachers in the technical colleges in Niger state and FCT Abuja Nigeria. Descriptive research design in the view of Nworgu (2006) is the study which aims at collecting data on, and describing in a systematic manner the characteristics, features or facts about a given population. The design was deemed appropriate since data was collected to identify areas of re-training needs of MVM teachers at technical college level. The study was conducted in all the technical colleges in Niger state and FCT Abuja State, Nigeria. The population of the study consists of 59 MVM teachers in all the technical colleges in the area of the study. The choice of the population was based on the fact that they are knowledgeable and therefore, in a very good position to give authentic information on the re-training needs of motor vehicle mechanics teachers at technical college level.

A structured questionnaire was the instrument utilized to elicit the required data from the respondents for the study. This was developed by the researchers from extensive review of literature and based on the objectives of the research. The instrument was face validated by three experts from the Department of Industrial and Technology Education, Federal University of Technology Minna, Niger State Nigeria. To determine the reliability of the instrument, it was pilot-tested on twelve respondents from Government Technical College Malali Kaduna, Kaduna State that were not part of the study. Then, Cronbach alpha was used to determine the internal consistency and it yielded a coefficient of 0.79 for research question One (1) (What are the retraining needs of motor vehicle mechanics teachers with respect to pedagogical skills?) and 0.83 for research question two (2) (What are the retraining needs of motor vehicle mechanics teachers with respect to practical skills?). Thus the instrument was considered appropriate for use by the researcher. The questionnaires were administered by the researchers and the entire instruments were retrieved and analysed. A five (5) point rating scale was used to determine the level at which competence is needed. The decision rule was based on theory of true class limits of numbers with numerical values ranging between 4.50 – 5.49 = Very Highly Needed (VHN); 3.50 – 4.49 = Highly Needed (HN); 2.50 – 3.49 = Needed (N); 1.50 – 2.49 = Moderately Needed (MN) and 0.50 – 1.49 = Not Needed (NN). Therefore, the mean responses of the respondents were interpreted based on the true class limits of numbers highlighted above.

5 PRESENTATION AND ANALYSIS OF DATA

The data were presented and analyzed based on the research questions posed in the study.

5.1 Pedagogical Skills Requirement

Research question 1: What are the perceived re-training needs of motor vehicle mechanics teachers at technical college level with respect to pedagogical skills?

The mean ratings for items on the required pedagogical skills are given in Table 1.

Table 1: Mean rating and standard deviation of the respondents on the re-training needs of motor vehicle mechanics teachers with respect to pedagogical skills.

No	Item Statement	\bar{X} N=59	SD	Remarks
1	Identifies and/or specified instructional goals and objectives which are based on learners needs	3.33	0.72	Needed
2	Identify and perform task analysis according to the objectives of the lesson	3.60	0.59	Highly Needed
3	Having thorough grasp of the structure and content of the subject expected to teach	3.43	0.65	Needed
4	Design instructions appropriate to goals and objectives.	3.40	0.63	Needed
5	Asking questions that will stimulate discussion and critical thinking.	3.42	0.51	Needed
6	Using instructional methods that will lead to the development of intellectual, affective, and psychomotor skills.	3.35	0.69	Needed
7	Design instructions that enable students to study industrial process first hand and see the relevant of workshops and laboratory	3.47	0.59	Needed
8	Identify the best method of presenting new skills and safe working habits associated with practical	3.48	0.62	Needed
9	Design and implement evaluation procedures which focus on learner's achievement and instructional effectiveness.	3.44	0.62	Needed
10	Promotes effective pattern of communication Use resources appropriate to instructional objectives.	3.54	0.60	Highly Needed
11	Uses organizational and management skills to establish maximally effective learning environment.	3.55	0.67	Highly Needed
12	Use resources appropriate to instructional objectives.	3.50	0.51	Highly Needed
13	Uses organizational and management skills to establish maximally effective learning environment.	3.45	0.55	Needed
14	Integrate into the instruction the cultural environment of students	3.45	0.52	Needed
15	Implement instruction appropriate to goals and objectives	3.34	0.55	Needed

Analysis of the result presented in Table 1 indicates the respondents' opinion on the re-training needs of MVM teachers at technical college level with respect to pedagogical skills. The result of the data presented above revealed that all the 15 items are needed by the teachers to improve effective teaching and learning of MVM programs in the technical colleges with mean value ranging between 3.33-3.60. This showed that the mean value of

each item was above 2.50 is the mean cut off point for the competencies needed by MVM teachers. The table also showed that the standard deviations (SD) of the items are within the range of 0.51 to 0.72; this indicated that the opinions of the respondents were not far from one another in their responses.

5.2 Practical Skills Requirement

Research question 2: What are the retraining needs of motor vehicle mechanics teachers with respect to practical skills?

The mean ratings for items on the required practical skills are given in Table 2.

Table 2: Mean Rating and Standard Deviation of Respondents on the Retraining Needs of Motor Vehicle Mechanics Teachers with Respect to Practical Skills

No	Item Statement	\bar{X} N=59	SD	Remarks
General Vehicle Maintenance				
16	Check the radiator for leak, dirt or presence of oil in the radiator	3.55	0.31	Highly Needed
17	Check and tighten clips or replace broken radiator hose.	3.47	0.31	Needed
8	Removal of brake drum, brake pads and brake shoes, repair and fix new ones.	3.52	0.27	Highly Needed
19	Check under the body for possible repairs such as tightening bolts and nuts, suspension /spring, "U" bolts and exhaust system.	3.26	0.39	Needed
20	Change engine oil filter and change or clean spark plugs	3.44	0.36	Needed
21	Check and set carburetor C.B point.	3.38	0.35	Needed
22	Servicing of carburetor.	3.50	0.29	Highly Needed
23	Dismantle a model engine and clean the cylinder head gasket.	3.50	0.29	Highly Needed
24	Check cylinder head for defects.	3.49	0.29	Needed

Table 2: Continued

No	Item Statement	\bar{X} N=59	SD	Remarks
25	Remove and replace cylinder head gaskets.	3.58	0.26	Highly Needed
26	Carryout tests on injectors for spray.	3.54	0.35	Highly Needed
27	Setting of pressure and spray of injectors.	3.47	0.30	Needed
28	Servicing of SI engine.	3.44	0.26	Needed
29	Servicing of CI engine	3.40	0.30	Needed
Transmission				
30	Dismantle of gear box and examine wear on the components.	3.40	0.34	Needed
31	Remove differential assembly, dismantle, clean and assess wear.	3.52	0.31	Highly Needed
32	Dismantling, assembling of clutch unit.	3.52	0.24	Highly Needed
33	Remove differential assemble, clean and assess wear.	3.44	0.27	Needed
34	Remove propeller shaft, universal –joint bearing and test for wear and straightness.	3.35	0.36	Needed
35	Greasing of appropriate joints.	3.45	0.24	Needed

The information presented in Table 2.0 reveals the respondents' view on the retraining needs of motor vehicle mechanics teachers at technical college level with respect to practical skills. The respondents are of the believed that MVM teachers need retraining in almost all the items listed in the table with mean value ranging between 3.26-3.58. This indicated that the mean value of each item was above the 2.50. The table also shows that the standard deviations (SD) of the items are within the range of 0.24 to 0.39; this indicated that the opinions of the respondents were not far from one another in their responses.

The respondents totally agreed that MVM teachers need retraining in all the items highlighted in the tables. Consequently, the summary of the analysis only suggest strongly that MVM teachers in the technical colleges are ill – equipped to teach professionally in the schools with respect to pedagogical as well as practical skills. Based on the findings from the study the discussion is made.

6 DISCUSSION

The acceptance of the fact that all the competencies highlighted in Table 1 are needed by MVM teachers did not come as a surprise. This only confirms the views of Fafunwa (1995) who noted that most Technical Vocational education (TVE) teachers, especially MVM teachers have insufficient and inadequate knowledge of their subject matter which render them incapable to perform their functions of imparting knowledge to the learners efficiently and effectively. Gyallesu (1992) also asserted that, the success of any educational system no matter how well it is planned depends to a large extent on the quality of teachers. The researcher observes that the greatest obstacle encountered in Nigerian schools especially in the technical colleges is the use of teachers who are inadequately prepared or who are not professionally skilled. A teacher must have an in-depth knowledge of pedagogy of teaching to be able to bring about desirable learning in the student entrusted to him, his knowledge notwithstanding.

Muhammad (1995) stated that MVM teachers in the technical colleges need training and retraining in some aspects of technical education curriculum where the teachers are not familiar with. This requires that teachers be exposed to new methodologies and curriculum innovation in their areas of specialization during the course of their training and retraining programs. Retraining of the teachers will enable the teachers to overcome the areas of inadequacies in terms of curriculum changes and innovation. The fact that most MVM teachers are ill-equipped professionally makes it very difficult for the objectives of the program to be realized. In-line with this Okeke (1989) stressed that, teacher's knowledge of the above objectives and the necessary experiences will go a long way to helping him select the learning experiences capable of developing skills, abilities, understanding, habit, attitude and appreciations among students, which they will need to meaningfully, enter and progress in employment. Where the teacher lack such basic knowledge, his students are likely to be ill-equipped. This seems to be the situation in our technical colleges today.

In order to achieve the objectives of technology education a teacher needs to be very sound in both subject matter and the pedagogy of teaching. A competent teacher show how best to derive the aims and objectives of a lesson, prepare the lesson plan, select teaching resources and methods, present the lesson, manage the classroom and evaluate the lesson. Apart from these competencies that are expected of the teacher; he should also be aware of present day research and development in instructional technology and should whenever possible participate in seminars, professional conferences, project work concerning teaching and learning process and problems relating to his area of specialization (Adigun, 1998). On this note, the teacher should keep an open mind for all new ideas and examine them critically and he should also realize that his task is not merely to teach but also help students to acquire skills, attitudes, habits of thoughts and qualities of character that will enable them function effectively in the society.

Table 2, focused on practical skills required by MVM teachers in the technical colleges. The Federal Republic of Nigeria (FRN, 2004) recognizes technology education of which MVM program is part of as that aspect of the total educational system which leads to acquisition of practical and applied skill, as well as basic scientific knowledge. The policy attaches much importance to technology education, for it is the nation's springboard for

acquisition of relevant skills for technological and economic development. Teachers of MVM in the technical colleges need to acquire practical skills for the objectives of the program to be realized. Though, most of the teachers seem to show awareness of the need for acquisition of practical, most of them lacked, disturbingly, the capacity to function effectively in many areas of practical in MVM in the schools workshop. Also Okorie and Ezeji (1988) observed that most teachers involved in the training and retraining in our schools today are mostly products of the senior secondary schools that have no genuine certificates or sufficient skills that can fix them up in an occupational area. Yet the teaching of TVE of which MVM program is part of continued to be characterized by emphasis on theory.

It is imperative that technical colleges should work in harmony with industries and other labor organizations so that the teachers can be retrained in the industries for them to acquire the necessary skills for them to be able to function effectively on the job. Establishing this working relationship will ensure that skills taught in schools are related to the needs of individual students as well as the labor market requirements. Teachers of MVM in the technical colleges must therefore keep abreast with the new technological development and must keep on learning and acquiring new skills in order to be able to demonstrate knowledge and new skills to their students. Their training should not be confined to the class work or workshops alone, but engaged in conducting intensive research on local technologies.

7 CONCLUSION

This study sets out to determine the pedagogical as well as the practical skills that are required by MVM teachers in Nigeria based on teachers perceptions. The data support the conclusion that teachers do not feel confidence of their pedagogical and practical skills. As a result of the above revelation, the following implications arise. Teachers of MVM program in the technical colleges needed training and retraining in pedagogical as well as practical skills to enable them to perform their professional responsibilities in their practice. The pre-service training received by the teachers was found to be rickety and completely defective, which might not perfectly prepare them for effective job performance. The MVM teachers need to be retrained in order to update their knowledge, skills and competencies with respect to pedagogical and practical skills to enable be able to teach the learners efficiently and effectively, so that the learners can graduate as competent craftsmen, technicians and technologist.

8 RECOMMENDATIONS

Based on the findings of the study, the following recommendations are made in order to retrain motor vehicle mechanics teachers for them to be able to perform effectively on the job.

- There should be linkage program between the technical colleges and the automobile industries by using some of the experienced supervisors in the industries as teachers

in order to train the MVM teachers to be to acquire needed practical skills so that they can teach the students effectively.

- The Nigerian universities and polytechnics offering courses in TVE especially automobile technology program could play a vital role in the retraining exercises especially during long vacations.
- A systematic program in the universities and the polytechnics should be drawn for the retraining MVM teachers for a period of three years, utilizing the vacation periods, for serving teachers, which will go a long way to equipping such teachers qualitatively.
- The emphasis in retraining should be in the areas of practical skills in the deficient areas as well as the requisite pedagogical skills.
- The technical colleges and local automobile industries should collaborate to organize seminars and workshops where they will share information on the changing trends in the automobile industries with respect to practical and how these changes can be incorporated into the curriculum of the schools.

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