e-ISSN 2795-3272
p-ISSN 2795-3264

10.5281/zenodo.11095429 Vol. 07 Issue 04 April - 2024 Manuscript ID: #01330

RETRAINING NEEDS OF MOTOR VEHICLE MECHANIC TEACHERS AND INSTRUCTORS ON AUTOMATIC TRANSMISSION SYSTEM FOR TEACHING IN TECHNICAL COLLEGES IN BAUCHI STATE

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Abstract

The study was designed to identify the areas of retraining needed by the teachers and instructors of Motor Vehicle Mechanics (MVM) trade in the technical colleges in Bauchi State, Northeastern Nigeria. The objective of the research was to identify the pedagogical and practical skills at technical college level. The research questions were; What are the pedagogical skills needed by MVM teachers and instructors for teaching ATS at technical college level? and What are the practical skills needed by MVM teachers and instructors for teaching ATS at technical college level? were used to guide in the conduct of the study. The null hypothesis was tested at 0.05 level of significance. A 58 item questionnaire which was face validated by three experts from the Department of Vocational and Technology Education, Abubakar Tafawa Balewa University, Bauchi State Nigeria and pilot-tested on twelve respondents from Government Technical College, Gombe, Gombe State that were not part of the study which yielded a Cronbach alpha coefficient of 0.993 was used to determine the internal consistency was used to collect data for the study. The data was analyzed using mean and standard deviation. 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.

Keywords

Retraining Needs, Motor Vehicle Mechanics Teachers and Instructors, Technical College.

INTRODUCTION

The dynamism of transmission systems technologies in automobile have placed automobile teachers and instructors to a tight corner on how to perform their duties particularly how to teach maintenance and repairs to students at technical college level. The influence of technology has rendered traditional skills inadequate for the world of work while creating need for new and often sophisticated skills in the automobile industry, there have been complex changes in the systems and components of automobiles that are imported or assembled in Nigeria. The new development has greatly brought about changes in the skills required of auto-mechanics craftsmen for employment in the automobile industry. Training and retraining is an indispensable tool for human and national development and hence, a worthwhile investment for greater productivity in any organization (Mabel & Olomukoro, 2017). For this reason, a consideration of a stable and functional educational system should involve consistent training and retraining of teachers for efficient implementation of the curriculum for schools. In the same vein, the consistent development and retraining of teachers in Motor Vehicle Mechanics (MVM) will improve the capability of teachers for efficient use of the curriculum, being the implementers of the educational programmes. As such, there is the need for teachers' retraining programmes and an adequate supply of human and material resources for educational productivity and consolidation of the Nigerian educational system, (Adebile & Foluke, 2019).

The increased number of new sub-systems in modern automobiles, intended to improve upon their safety, economy, and comfort among other things, have made them more sophisticated and complex to maintain, (Odigiri & Okafor, 2018). It is required that our Technical Colleges should lay the groundwork to meet both the demands of industry and the needs of the students. For this reason, Technical Colleges should be designed to provide trainees with the skills and knowledge required for employment in the Automotive Service Technician field. Therefore, it is hoped that effective management of teachers through the provision of funds, redistribution of teachers among schools, and retraining will not only improve the quality of education and consolidate the educational system; but that the curriculum for the Nigerian schools will be effectively and efficiently implemented towards the fulfillment of educational goals and objectives. According to Enaibe (2014), the teacher is a very important element of education and provides opportunities for learners to carry out education processes to arrive at the desired changes in behavior. Hence, good teachers produce good students and so, good citizens, while bad teachers produce bad students and so, bad citizens. This is why leaders, policymakers, and administrators must take teachers and teaching very seriously, especially at the formative ages of our youths, which primary and secondary schools' levels typify and Technical Colleges inclusive.

One of the main reserves for road accident prevention lies in decreasing driver fatigue and work intensity, particularly on route vehicles in the urban cycle. This decrease is achieved due to vehicle driving simplification and reduction of driver's physical load, allowing concentrating on road conditions. It results in the enhancement of traffic safety and a decrease of the degree of influence of driver's experience and personal characteristics on the operational indices of a vehicle (Kurochkin, 2018).

Nowadays, to facilitate and simplify the driving process, automatic transmission control is connected to vehicles, providing high economic, dynamic and excellent performance and reducing the impact of human factors on the control processes. Due to this, the driver is free from the need to shift gears manually by using the transmission computer to change gears (Kunle 2015). There are few types of automatic transmission systems that are providing high economic, dynamic and excellent

performance, and reducing the impact of human factors on the control processes. Automatic transmission, automated manual transmission, and intelligent gear shift schedules are key systems to improve the benefits and performance of a vehicle. Since the manufacturing and use of vehicles with automatic transmission systems is on the increase in both developed and developing countries, this study seeks to study the Retraining Needs of Motor Vehicle Mechanic Teachers and Instructors on Automatic Transmission System for Teaching in Technical Colleges in Bauchi State.

Motor vehicle mechanics cannot be separated from Vocational and Technical Education since they are part and major generators of skills and knowledge for the labor force. Hence, 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 Motor Vehicle Mechanic teachers are incompetent (Udofia, 2015). It is also the belief of many educators that pre-service training of teachers is not sufficient to prepare teachers for life (Okobia, 2017).

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, 2020) emphasized that re-training of teachers shall be improved 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.

Retraining 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 research seeks to study the Retraining Needs of Motor Vehicle Mechanic Teachers and Instructors on Automatic Transmission System for Teaching in Technical Colleges in Bauchi State.

LITERATURE

According to Oyitso & Olomukoro (2017), training has always been recognized as an important factor that contributes to improved performance of an employee right from the days of Fredric Taylor of Scientific Management Fame. The term "training" implies exercising some repetitive actions aimed at developing limited ability or skill rather than the development of the entire personality (Tella, 2014). Teachers' training is the process of imparting to teachers the skill to perform their job effectively either mentally or physically, the acquisition of which may or may not be accompanied by understanding of the principles on which the operation depends. It is also the process or a set of activities aimed at making a person more efficient at the performance of a given task.

It could be understood that doctors, lawyers and teachers are trained rather than being educated. Teachers are included here because, their preparation is directed towards acquisition of certain special skills, and the evidence of learning in the classroom, is the successful performance skills of the teacher termed pedagogue. In the teaching profession, the teacher constitutes a critical factor in the success of any educational system. Many laudable educational initiatives have failed mainly because they did not take due account of the "teacher factor". The quality of the teacher, to a large extent, determines the quality of the educational system (Rogers 2013). It should be recognized that, production of quality teachers will enhance the consolidation of educational system in Nigeria.

Therefore, training and retraining of teachers in Automobile Technology with emphasis on automatic transmission will enhance quality teaching and better teachers' productivity, and consolidation of the Nigerian educational system.

If the Nigerian technical colleges must survive and more importantly increase its productivity, the teachers and instructors must have the competence to provide the necessary workforce, thus the need for training and retraining of teachers to develop their abilities and skills in order for them to function effectively and efficiently.

Training is about developing employees as an individual to make them capable and comfortable in their jobs and consequently in their life. In order words it is an organized process for increasing the knowledge and skills of the employee. It is a process aimed at changing the behaviour in such a way that the impact would be useful for the uplift of the organization, (Priyanka, 2015).

Retraining and vocational rehabilitation, according to Wikipedia (2013) is the process of learning a new skill or trade, often in response to change in the economic environment. Generally, it reflects changes in the profession rather than "upward" movement in the same field. Supporting this view, NSW (2013) states that retraining is a wonderful professional experience. It will provide employees with the opportunity to acquire new knowledge and teaching skills, learn with and form innovative lecturers and motivated colleagues, develop employees' confidence as teachers, and broaden career advancement opportunities.

The above means that training and retraining are investment and not a cost. Retraining is considered as a tool for human resource development. It has immense potential in transfer and utilization of latest technical know-how, leadership development, organization of people, formation of self-help-groups, mobilization of people as well as resources, entrepreneurship development among others which are considered essential components of Human resource development, Priyanka (Abdullahi, 2017).

Port, (2013) states that retraining is a process of learning a sequence of programmed behaviour. It is an application of knowledge that attempts to improve the performance of employees on the current job and prepares them for the intended job. Training and retraining are designed for specific job related purposes.

Concoran (2016) noted that, nearly every state in Nigeria and other Nations are involved in an attempt to raise academic standards. This movement also calls for a shift from a behaviourist approach to teaching, in which students are often passive recipients to Teachers-Pupil generated knowledge, and drill and practice is primary pedagogy. This approach actively engages students in the construction of knowledge. To make this shift, teachers must enhance their knowledge of the subject matters and learn to use new teaching strategies.

Training may be used directly to increase the job skills of an individual or a group of individuals by teaching them to perform their task more efficiently and effectively. For training to operate efficiently and effectively as an input/output mediator, it must be focused on the individual and the situation as the need arises. Teachers are trained for more skills acquisition for better service delivery, (Ogunu, 2014). Through training, teachers update their knowledge and make abreast innovations in education. It also equipped teachers to face challenges of teaching-learning process and

enhances their professional growth. Ogunu added that in order to facilitate upward movement and adequate professional competence, teachers' training is necessary.

Odor (2010), highlights the following as some of the skills derived from teachers' training and retraining: Teachers obtain higher academic and professional qualification in order to improve their position in the school organization hierarchy; teachers acquire academic and professional knowledge which help to meet up with the present and future challenges of their primary function; through training and retraining, teachers were kept in touch with their counterpart and new development within and outside the country in their professional growth. The acquisition of these skills also improves the social and academic status of teachers in the society. Teachers have to go for training and retraining to make available quality teachers for implementation of educational programs in Nigeria.

Challenges of Retraining of Teachers in Technical Colleges

The numbers of qualified teachers on ground in the Technical Colleges are inadequate to match with the enrolment of students. Asanibare (2016), states that the most creative modern curriculum and the most advanced technology will be in little use if weak, misguided, incompetent, ignorant and unimaginative, teachers are allowed to teach because delinquent behaviour will be on the increase. Supporting this view, Mbakwem (2017) believes that outside students' diligent behaviour, other commonly identified problems of employing unqualified teachers leads to low academic achievement on the part of students and teachers.

The National Policy on Education (FRN 2004: 38) also states the importance attached to teachers in National development and emphatically affirms that "no education system can arise above the quality of its teachers", thus the need to develop them through training such as in-service, conferences, workshops among others. Concoran (2016) in a brief on education policy states that virtually every state in the country reform efforts are dramatically raising expectations for students and consequently for teachers. In response to these, reforms, initiatives, educators are being asked to master new skills and responsibilities to change their practice. To meet these new expectations, teachers need to deepen their content, knowledge and learn new methods of teaching. They need opportunities to develop, master and reflect on new approaches to working with children, all of these activities fall under the general heading of professional development.

However, if today's teachers are to be adequately prepared to meet the new challenges they are facing, this laissez-faire approach to professional development must come to an end. According to Onipe (2013), when one talks of quality and functionality of education in Nigeria today, he is talking of illiterate primary school leavers, unemployable University graduates, inefficient and disoriented teachers at all the three levels of education and poor educational infrastructure. One can go on and on enumerating various types of decay in the education sector. Onipe adds that, unfortunately when one can talk of teachers in Nigeria, particularly at the primary and secondary school levels of education, we are talking of the dregs of the society. Tijani et al (2019) in supporting this, state that despite the fact that teachers are the livewire of the society and are indispensable to the achievement of any meaningful development in it, the current status of teachers' education and teachers in Nigeria is pathetic, Factors attributable to this include poor pay, abject poor working conditions and apparent confusion in the implementation of innovation in teacher education programme in the country.

Some of the challenges to retraining of teachers are as follows:

I. **High Lack of Motivation:** Teachers are looked down upon by government, the community, and even students. Thus, teachers are the ones whose salaries are always delayed; communities never recognize teachers; even the students look down on teachers as well as the teaching profession. In fact, teachers feel insulted when many suggest that they consider teaching for a profession. With this kind of experience, the teacher is left with a low morale and a low sense of motivation, thus the matter of self-improvement in the area of skill acquisition is far from their thoughts. Not when they are condemned by society to living at substandard level.

II. **Highly Existing Quality of Teachers*:*** According to Ikeotuoye in Onipe (2013), the only males and females who go to colleges of education, do so reluctantly as they end up with poor performance in the school certificate examination. As soon as they obtain the Nigeria Certificate in Education (NCE), most of them make frantic efforts to get into the university to read courses other than education. Partially, only those who fail in this effort still read education. The above has been the story of those who find themselves in the teaching profession. The fact remains that if and when people find themselves in the teaching profession, unhappy and the existing situation not encouraging, how do we expect them to concern themselves with courses that will enhance their skills in the classrooms. Thus, the society is left with people with inferiority complex, low self-esteem, dissatisfaction, bitterness, hunger and other demeaning factors.

III. **Highly Irregular Re-training of Teachers*:*** From the onset of the educational system in Nigeria, no serious efforts have been put in place for teacher retraining programmes. Lack of re-training inhibits effective teaching since knowledge is dynamic and a teacher with narrow experience will not be able to adequately teach the subject matter and will also be limited in his teaching method and strategies. It is for this reason that in advanced countries, periodically teachers are expected, as a matter of policy to undergo a teacher training and re-training programmes, as passing this course or training programmes determine ones fate to be retained or remain a teacher.

IV. In addition, the question that arises is, are the crop of secondary school teachers set for retraining for the Nigerian educational system to succeed? Most of them have already lost interest in what they are doing, thus those in the rural areas have turned the students to their laborers in their farms, while in the urban areas wives of permanent secretaries and other government officials spend time travelling to purchase goods for sale.

V. **Duration of Post Graduate Diploma in Education (PGDE)*:*** The argument by many education scholars and managers has been that one year is not enough or sufficient to prepare one adequate for teaching service. Therefore, when talking about professionalization of teaching, Ozoji in Tijani et al (2016) observe that the criterion for standard of admission for teachers in tertiary training raises the problem or challenge of poor quality.

VI. **The Problem of Guidance and Counseling*:*** Counseling form a very crucial aspect of human relations activities especially in the area of good conduct. Since the cardinal objective of the 6.9.3 system of education is to enable students to be independent, marketable, self-employed and self-sustaining then the education system especially at the secondary level needs functioning counseling education. The idea is that, according to, Esere (2014), trained counselors posted to the nation's schools will assist students to develop their maximum potentials and meet the challenges of life. To best appreciate the role of counseling in human resource development, the job description of the school counselor as itemized by CASSON in Esere (2014) are highlighted as orientation of new students; educational counseling; Vocational counseling; Personal/social counseling; referral services; Follow-up services;

Liaison and Follow-up services and keeping of students' records etc. These aspects, which if implemented would have added greater values to Nigerian secondary education are left out. Rather trained counselors are made to teach core subjects in the classroom leaving our delinquent students to fate.

VII. **Conduct of Teaching Practice:** Teaching practice is believed to be an indispensable aspect of teacher education, yet according to Abdullahi (2015), research evidences abound that tend to confirm the ineffectiveness and inefficiency of teaching practice exercise in Nigerian education system. Given the concept of best practice, teaching practice if properly implemented is designed to bring about encouragement and good communication between teachers and learners, encourage interaction among learners; provide opportunities for active participation, timely and appropriate responses and feedback; encourage time and task; motivate learning by communicating expectations; respecting diverse talents and ways of learning, Arthur and Zelde in Abdullahi (2019). It therefore means teaching practice as a part of re-training process for teachers will be an effective means of sharpening the knowledge and skill of teachers in secondary schools. Evidently, the process as designed to aid young teachers into the profession is ineffective so it leaves the question of how re-training exercises will or may succeed.

The Status of Automobile Technology Teaching in Nigeria Technical Colleges

The curriculum of automobile technology is divided into four major sections. According to Elom (2014), these sections are:

1. **Workshop technology,** which concentrate on the study of the precautions, tools, materials and equipment in the automobile technology workshop.
2. **Related science and calculations**, which focus on the basic mathematics and science principles in automobile technology.
3. **Components and the function,** which ensure the identification of the various parts of the motor vehicles and their separate functions and principle of operations.
4. **Trouble shooting, diagnosis and repairs,** which involve the identification of some faults and the possible repairs andreplacements.

This support Osuala's (Sani, 2018) view that, vocational education programmes at all levels in the formal school system include general studies, practical training for the development of practical skills required in the chosen occupation and related theory. Osuala emphasized that although the relative proportion of these components may vary considerably from one institution to another and from one discipline to another, the emphasis is usually on practical training. Osuala's stance as stated above supports two important principles of vocational education namely; **(a)** vocational education will be efficient in proportion as the environment in which he must subsequently work.**(b)** effective vocational education can only be given where the training jobs are carried in the same way, with the same operations, the same tools and the same machine as in the occupation itself, Prosser and Quigley in Okoro (2017).

Regrettably, automobile technology is not effectively taught and learnt in most Nigerian schools. In support of the above fact, Elom (2017) stated that most automobile technology teachers are not technically competent. Other problems identified by Elom includes none availability of materials and equipment for practical work, poor interest of the learners, lack of conducive learning environment and ineffective administration.

Practical Skills Needed by MVM Teachers and Instructors

The level of competence of a country's skilled workers and technicians is centrally important to the flexibility and productivity of its labour force. Skilled workers and technicians enhance the quality and efficiency of product development, usage, production and maintenance, and they supervise and train workers with lesser skills. A knowledgeable and capable skilled workforce is therefore the secret to economic success and national development.

Automotive service technicians use their high-tech skills to inspect, maintain, and repair automobiles and light trucks that run on gasoline, ethanol and other alternative fuels, such as electricity. The increasing sophistication of automotive technology now requires workers who can use computer, image projectionized shop equipment and work with electronic components while maintaining their skills with traditional hand tools.

Ezeji & Okorie (2014) explained that most jobs require some special manipulative skills, the extent which varies from one occupation to another. Auto- mechanic trade is one of such occupations that require updating of skill in order to meet the challenges of recent technologies in automobile industry. The ability to apply expertise relating to a method, a process or products as observed by Schermerhom (2018) is known as technical skill. Most occupations therefore, (auto-mechanics trade) have technical skill component in them. Technical skill in automobile technology are therefore those skills applied by the technician in the performance of such task as checking, detecting, servicing, maintenance and repair of automobile components. The skills of an auto mechanic will vary greatly. Some mechanics develop the skills to work on all parts of a vehicle, while others choose to specialize in a particular field; some of these skills are highlighted below.

The Need for Retraining of Automobile Technology 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.

Retraining of teachers and instructors on the job in order to enhance functional educational system in Nigeria and to improve the process of teaching and learning is very important in quality education. The process of training and development aims at increasing the ability of individuals and groups to contribute to organizational effectiveness. While retraining is designed to improve the teachers' and instructors' skills, also development programmes are designed to educate employees beyond the requirements of their present position so that they will be prepared for promotion and be able to take a broader view of their role in the organization.

The need to train and to retrain teachers in Motor Vehicle Mechanic, especially automatic transmission who are being promoted is self-evident, every job usually require training in new skills. For effective productivity of teachers and consolidation of Nigeria educational system, teachers in MVM trade must be effectively trained and retrained (Akinbote, 2018). Training and retraining of the

teachers and instructors is in the ethnics of the profession. This will improve methods, skills, and procedures to enhance their outputs, efficiency and productivity. Over the years when teachers were employed in large number, induction trainings were organized for them by the Teaching Service Commission but of recent, employment is scarcely and secretly done and hence the few newly employed teachers do not undergo any form of induction.

The teachers of ATT program in the schools should be retrained periodically in order 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 ATT 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 ATT 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, Audu (2014).

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. Retraining is defined as upgrading of existing skills or acquiring a new one. Haruna (2018) 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 ATT 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 ATT 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 (2017) 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 (2016) 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.

METHODOLOGY

The study adopted a descriptive survey research design to elicit information from MVM teachers and instructors in all the institutions where motor vehicle mechanics trade is offered as automobile technology or automobile education, all centers where ATS Gearboxes are maintained or repaired, and all the technical colleges in Bauchi state that offer motor vehicle mechanics (MVM) trade. Descriptive research design in the view of Nworgu (2016) is the study that aims at collecting data on and describing systematically the characteristics, features, or facts about a given population. The design is deemed appropriate since data is to be collected to identify areas of retraining needs of MVM teachers and instructors at all technical colleges in Bauchi.

The Area Study

The study was carried out in all the institutions where motor vehicle mechanics trade is offered as automobile technology or automobile education, all centers where ATS Gearboxes are maintained or repaired and all the technical colleges in Bauchi state that offer motor vehicle mechanics (MVM) trade. What is now known as Bauchi was until 1976 a province in the then North-Eastern State of Nigeria. According to the 2006 census, the state has a population of 4,653,066. Bauchi State occupies a total land area of 49,119 KM^2 (18,965sq mi) representing about 5.3% of Nigeria's total landmass and is located between latitudes 9° 3' and 12° 3' North and longitudes 8° 50' and 11° east. The state is bordered by seven states, Kano and Jigawa to the north, Taraba and Plateau to the south, Gombe and Yobe to the east, and Kaduna to the west.

Population, Sample and Sampling Techniques

The population of the study consisted of all the 17 MVM teachers and 7 MVM instructors in all the Technical Colleges in Bauchi State. The choice of the population is based on the fact that they are knowledgeable and therefore, in a very good position to give authentic information on the retraining needs of motor vehicle mechanics teachers and instructors of all technical colleges in Bauchi state.

There was no need for any sampling since the population is small and manageable, enough for the purpose of this research.

Method of Data Collection

A 58 items structured questionnaire titled MVM Teachers and Instructors' Retraining Needs on Automatic Transmission which consists of three Sections (A – C) was the instrument utilized in eliciting the required data from the respondents for the study. The 58 items on the questionnaire were well selected, enough to elicit the relevant and needed information for this research.

Section A is the personal data of the respondents. Section B gets information for research question 1 while Section C collects data for research question. For research question 1, the researcher will adapt an instrument used by Audu etal, (2014) to elicit information for their paper titled Retraining Needs of MVM Teachers at Technical College Level. For research question 2, the researcher developed a questionnaire with relevant information for the collection of data.

The questionnaires were administered by the researcher. The entire instruments was retrieved and analyzed using a five (5) point likert rating scale. Twenty two (22) copies of the questionnaire were distributed for the purpose of this research, 17 copies for teachers, and 7 for instructors, and all were retrieved.

Method of Data Analysis

The data was analyzed using SPSS analysis tool to obtain the mean and standard deviation of the data. The decision rule was based on the theory of True Class Limits of numbers with numerical values ranging between 4.50 –5.00 = 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 0.01 – 1.49= Not Needed (NN). Therefore, the mean responses of the respondents were interpreted based on the true class limits of the numbers highlighted above.

RESULTS AND DISCUSSION

Research Question One: What are the pedagogical skills needed by MVM teachers and instructors for teaching ATS at Technical College level?

Table 1: Mean and standard deviation of the respondents on the pedagogical skills needed by MVM teachers and instructors for teaching ATS at Technical College level.

N_T =17 N_I = 7

S/No	ITEMS	X_T	SD_T	X_I	SD_I	X_G	REMARK
1.	Identify and/or specify instructional goals and objectives which are based on learners' needs	3.41	1.004	3.14	1.345	**2.96**	**N**
2.	Identify and perform task analysis according to the objectives of the lesson	3.59	1.326	3.57	1.272	**3.56**	**HN**
3.	Having thorough grasp of the structure and content of the automatic transmission system	4.59	1.004	3.71	1.380	**4.33**	**VHN**
4.	Asking questions that will stimulate discussion and critical thinking.	2.76	.903	3.14	1.345	**2.87**	**N**
5.	Using instructional methods that will lead to the development of intellectual, affective, and psychomotor skills.	3.12	1.495	2.71	1.254	**3.00**	**N**
6.	Design instructions that enable students to study industrial process first hand and see the relevance of workshops and laboratory	3.94	1.249	3.57	1.134	**3.83**	**HN**
7.	Identify the best method of presenting new skills and safe working habits associated with practical	3.59	1.326	3.43	1.134	**3.54**	**HN**
8.	Design and implement evaluation procedures which focus on learners' achievement and instructional effectiveness	3.47	1.419	3.86	1.069	**3.58**	**HN**
9.	Implement instructions appropriate to the achievement of goals and objectives	3.00	1.458	2.86	1.345	**2.96**	**N**
10.	Identify learner's emotional, social, physical and intellectual needs for effective lesson delivery	2.59	1.176	2.71	1.496	**2.63**	**N**
11.	Implement instructions that are	3.12	1.219	2.14	1.069	**2.83**	**N**

	consistent with plan the lesson plan						
12.	Demonstrate a variety of instructional models and teaching skills appropriate to specified objectives and to particular learners	4.53	.874	3.86	1.069	**4.33**	**VHN**
13.	Design instruction appropriate for the achievement goals and objectives which are based on learner's needs	3.24	1.091	3.43	1.134	**3.30**	**N**
14.	Design and implements evaluation procedures which focus on learners' achievement and instructional effectiveness	3.88	.857	3.14	1.574	**3.66**	**HN**
15.	Promote effective patterns of communication	2.35	1.498	3.14	1.574	**2.58**	**N**
16.	Use resources appropriate to instructional objectives	2.29	1.263	3.00	1.155	**2.50**	**N**
17.	Integrate into instruction the cultural environments of students;	2.94	.899	3.14	1.069	**3.00**	**N**
18.	Modify instruction on the basis of the learner's verbal and nonverbal feedback during instruction;	3.65	.702	3.14	1.574	**3.50**	**HN**
19.	Use organizational and management skills to establish a maximally effective learning environment;	2.76	.831	3.14	1.069	**2.87**	**N**
20.	Identify and reacts with sensitivity to the needs and feelings of self and others;	3.18	1.015	3.43	1.134	**3.25**	**N**
21.	Exhibit openness and flexibility;	2.35	1.730	3.00	1.291	**2.54**	**N**
22.	Work effectively as a member of a professional team;	3.59	1.121	3.00	1.291	**3.42**	**N**
23.	Analyze professional effectiveness and continually strives to increase that effectiveness;	3.76	1.200	2.86	1.345	**3.50**	**HN**
24.	Design and implements instructions which incorporates career education concepts.	3.12	1.269	2.86	1.574	**3.04**	**N**
	Cluster Mean	**3.28**	**1.164**	**3.16**	**1.279**	**3.23**	

Source: Fieldwork, 2023

Table 1 shows the Mean and standard deviation of the respondents on the pedagogical skills needed by MVM teachers and instructors for teaching ATS at Technical College level. The Table showed the research one question has cluster mean of 3.28 for teachers and 3.16 for instructors. The research question has the grand mean of 3.23 which indicate that all pedagogical skills are needed by MVM teachers and instructors for teaching ATS at Technical College level. Analysis of the result 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 24 items are needed by the teachers to improve effective teaching and learning of MVM programs in the technical colleges with mean value ranging between 2.50-4.33. 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 1.16 to 1.38; this indicated that the opinions of the respondents were not far from one another in their responses.

Research Question Two: What are the practical skills needed by MVM teachers and instructors for teaching ATS at technical college level?

Table 2: Mean and standard deviation of the respondents on the practical skills needed by MVM teachers and instructors for teaching ATS at technical college level

N_T =17 N_I = 7

S/No	ITEMS	X_T	SD_T	X_I	SD_I	X_G	REMARK
25.	Road test the vehicle to verify automatic transmission system problems based on driver's report; determine necessary action.	3.59	1.004	3.43	.976	3.54	HN
26.	Diagnose noise, vibration, harshness, and shift quality problems; determine necessary action.	4.29	1.213	3.29	1.380	4.00	HN
27.	Diagnose fluid loss, type, level, and condition problems; determine necessary action.	3.82	1.286	3.00	1.291	3.58	HN
28.	Perform pressure tests; determine necessary action.	3.59	1.176	3.43	1.134	3.54	HN
29.	Perform stall tests; determine necessary action.	3.24	1.033	3.43	1.272	3.30	N
30.	Perform torque converter clutch (lock-up converter) mechanical/hydraulic system tests; determine necessary action.	4.00	1.369	2.86	1.345	3.68	HN
31.	Diagnose electronic transmission control systems using appropriate test equipment, service information, technical service bulletins, and schematics;	4.12	1.219	3.71	.951	4.00	HN
32.	Differentiate between engine performance, or other vehicle systems, and transmission/transaxle related problems; determine necessary action.	3.65	.862	3.29	1.380	3.55	HN
33.	Diagnose shift quality concerns resulting from problems in the electronic transmission control system; determine necessary action.	3.76	1.251	3.43	.976	3.66	HN
34.	Inspect, adjust, and replace manual valve shift linkage, transmission range sensor/switch, and park/neutral position switch (inhibitor/neutral safety switch).	3.35	1.169	3.29	1.113	3.33	N
35.	Inspect, adjust, and replace cables or linkages for the throttle valve (TV) and accelerator pedal.	3.82	1.380	3.43	1.272	3.71	HN
36.	Inspect transmission fluid cooler, lines and fittings.	3.82	.809	2.71	1.380	3.50	HN
37.	Inspect valve body mating surfaces, bores, valves, springs, sleeves, retainers, brackets, check balls, screens, spacer plates, and gaskets; replace as necessary.	3.88	1.495	3.57	.976	3.79	HN
38.	Torque valve body fasteners to specification.	3.65	1.057	3.86	1.215	3.63	HN
39.	Inspect, replace, and/or align power train mounts.	2.88	.697	3.43	1.134	3.04	N
40.	Replace fluid and filter(s); verify proper fluid level and type (for transmissions with, or without, a dipstick).	3.82	1.074	3.29	.951	3.67	HN
41.	Remove and install transmission/transaxle	3.65	1.057	3.14	1.069	3.50	HN
42.	Inspect converter flex (drive) plate, converter attaching bolts, converter pilot, crankshaft pilot bore, converter pump drive surfaces.	3.53	1.068	3.00	1.291	3.38	N

43.	Install torque converter and establish correct converter-to-pump engagement; inspect converter free movement for pilot engagement during transmission installation.	4.00	.791	3.14	1.069	3.75	HN
44.	Inspect, test, flush or replace transmission fluid cooler.	3.24	.903	4.00	.816	3.46	N
45.	Disassemble, clean, and inspect transmission case, sub-assemblies, mating surfaces, and thread condition.	4.47	.624	4.00	1.000	4.33	HN
46.	Inspect and measure fluid pump components; replace as necessary.	4.18	1.015	3.29	1.254	3.92	HN
47.	Inspect fluid delivery circuit, including seal rings, ring grooves, sealing surface areas, feed pipes, orifices, and encapsulated check valves (balls).	3.88	.600	3.14	1.069	3.66	HN
48.	Inspect bushings; replace as necessary.	4.59	.712	3.29	.951	4.21	HN
49.	Inspect and measure components of the planetary gear assembly; replace as necessary.	4.06	1.029	3.43	.976	3.88	HN
50.	Inspect case bores, passages, bushings, vents, mating surfaces, and dowel pins; repair or replace as necessary.	3.82	1.074	3.29	1.254	3.67	HN
51.	Inspect valve body mating surfaces, bores, valves, solenoids, springs, sleeves, retainers, brackets, check balls, screens, spacer plates, and gaskets; replace as necessary.	3.94	1.345	3.71	1.496	3.87	HN
52.	Inspect and measure transaxle final drive components; repair, replace and/or adjust as necessary.	3.47	.874	2.86	1.345	3.29	N
53.	Assemble after repair.	4.24	.903	3.14	1.345	3.92	HN
54.	Inspect components of the hydraulic clutch pack assembly; replace as necessary.	3.94	.748	3.14	1.069	3.71	HN
55.	Measure clutch pack clearance; adjust as necessary.	4.06	.556	3.00	1.414	3.75	HN
56.	Air test the operation of clutch and servo assemblies.	3.65	1.115	2.29	1.113	3.25	N
57.	Inspect components of one way clutch assemblies; replace as necessary.	2.94	1.391	3.14	1.069	3.00	N
58.	Inspect bands and drums (housings/cylinders); replace and/or adjust as necessary.	4.00	.612	3.29	1.496	3.79	HN
		3.79	**1.015**	**3.29**	**1.172**	**3.64**	

Source: Fieldwork, 2023

Table 2 shows the Mean and standard deviation of the respondents on the practical skills needed by MVM teachers and instructors for teaching ATS at technical college level

The Table showed the research question two has cluster mean of 3.79 for teachers and 3.29 for instructors. The research question has a mean grand of 3.64 which indicates that all respondents agree that all the practical skills are needed by MVM teachers and instructors for teaching ATS at technical college level.

Analysis of the result indicates the respondents' opinion on the re-training needs of MVM teachers at technical college level with respect to practical skills. The result of the data presented

above revealed that all the 34 items are needed by the teachers to improve effective teaching and learning of MVM programs in the technical colleges with mean value ranging between 3.00-4.00. 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 1.00 to 1.10; this indicated that the opinions of the respondents were not far from one another in their responses.

4.3 Findings of the Study

The following are the findings of this study:

1. The findings of research question one indicates that all pedagogical skills are needed by MVM teachers and instructors for teaching ATS at Technical College level. Hence the result of the hypothesis one (Ho1) was upheld. Hence there is no significant difference between the mean responses of MVM teachers and MVM instructors on the pedagogical skills needed for teaching ATS at technical college level.
2. The findings of research question two all respondents that all the practical skills are needed by MVM teachers and instructors for teaching ATS at technical college level. Hence the result of the hypothesis two (Ho2) was upheld. Therefore, there is no significant difference between the mean responses of MVM teachers and MVM instructors on the practical skills needed for teaching ATS at technical college level.

4.4 Discussion of Findings

The findings one indicates that all pedagogical skills are needed by MVM teachers and instructors for teaching ATS at Technical College level. Hence the result of the hypothesis one (Ho1) was upheld. Hence there is no significant difference between the mean responses of MVM teachers and MVM instructors on the pedagogical skills needed for teaching ATS at technical college level.

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 (2015) 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 (2013) 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 (2015) 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 (2017) 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, 2018). 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.

The findings two indicates all respondents that all the practical skills are needed by MVM teachers and instructors for teaching ATS at technical college level. Hence the result of the hypothesis two (Ho2) was upheld. Therefore, there is no significant difference between the mean responses of MVM teachers and MVM instructors on the practical skills needed for teaching ATS at technical college level.

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 effective in many areas of practical in MVM in the schools workshop. Also Okorie and Ezeji (2014) 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.

CONCLUSION AND RECOMMENDATION

Conclusion

The main aim of the study is to identify the Retraining Needs of MVM Teachers and Instructors on ATS for Teaching in Technical Colleges in Bauchi State. Based on the aim and objectives of the study, four research questions were raised with four null hypotheses for the study. The research design adopted for the study was a survey research design and the study cover all the eight Technical Colleges of Bauchi State. The population of the study is 24 respondents which consist of 17 MVM Teachers and 7 MVM Instructors from the eight Technical Colleges of Bauchi State. The instrument for data collection in this study was a structured questionnaire. The instrument was validated by two experts from the Department of Vocational and Technology education and one expert of Test and Measurement from ATBU Staff School. The data collected were analysed using IBM SPSS version 21 and the statistical tools used were mean and standard deviation.

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. The teachers and instructors 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.

From the findings of this study it shows shows that all the software operation skills are needed by MVM teachers and instructors for auto-scanning in diagnosing ATS faults at technical college level, that all the practical skills are needed by MVM teachers and instructors for teaching ATS at technical college level, that all the software operation skills are needed by MVM teachers and instructors for auto-scanning in diagnosing ATS faults at technical college level and that all practical skills are needed by MVM teachers and instructors for auto-scan tools in diagnosing ATS faults at technical college level.

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.

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.

1. MVM departments should be well equipped with modern automobile technology facilities and competent teachers/instructors with respect to pedagogical skills should be employed to man the facilities in order to enhance teaching and learning of the trade in our colleges.
2. 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 and instructors to acquire needed practical skills so that they can teach the students effectively.
3. 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.
4. The findings of the study should be made available to policy makers like the automobile council of Nigeria, educational institutions and other cooperate bodies/agencies of education to enable them effect necessary changes in the MVM programme with respect to its theories and practical activities.

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