TECHNIQUES FOR MOTIVATING MOTOR VEHICLE MECHANIC STUDENTS'PSYCHOMOTOR SKILLS DEVELOPMENT IN TECHNICAL COLLEGES IN NIGER STATE

BY

YUSUF Fredrick
2018/3/74375TI

DEPARTMENT OF INDUSTRIAL AND TECHNOLOGY EDUCATION
FEDERAL UNIVERSITY OF TECHNOOGY, MINNA

APRIL, 2023

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A RESEARCH PROJECT SUBMITTED TO THE DEPARTMENT OF INDUSTRIAL AND TECHNOLOGY EDUCATION FEDERAL UNIVERSITY OF TECHNOOGY, MINNA

IN PARTIAL FULFILLMENT OF THE REQUIREMENT FOR THE AWARD OF BACHELOR OF TECHNOLOGY DEGREE (B. TECH) IN INDUSTRIAL AND TECHNOLOGY EDUCATION

APRIL, 2023

DECLARATION

I Yusuf Fredrick with Matric No: 2018/3/74375TI an undergraduate student of the Department of Industrial and Technology Education certify that the work embodied in this project is original and has not been submitted in part or full for any other diploma or degree of this or any other university

Yusuf Fredrick _____

2018/3/74375TI Signature & Date

CERTIFICATION

This project has been read and approved as meeting the requirements for the award of B. Tech degree in Industrial and Technology Education, School of Science and Technology Education, Federal University of Technology, Minna.

Dr. M. Abdulkadir
Project Supervisor

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Sign & Date

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Head of Department

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Sign & Date

_____
External Examiner

_____
Sign & Date

DEDICATION

I dedicate this work to God Almighty, the sustainer of life and health and to my parent Mr & Mrs Yusuf Khabi

ACKNOWLEDGEMENT

The success and final outcome of this project required a lot of guidance and assistance from many people and I am extremely fortunate to have got this all along the completion of my research work. Whatever I have done is only due to such guidance and assistance and I will not forget to thank them.

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ABSTRACT

This study was designed to examine the techniques for motivating motor vehicle mechanic students' psychomotor skills development in technical colleges in Niger State. A descriptive survey research was employed for the study. Three research questions and three hypotheses guided the study. 54 items structured questionnaire developed by the researcher and validated by 3 experts was used for the data collected for the study. A total of 120 respondents comprising of 15 motor vehicle mechanic teachers and 105 students was used as a total population for the study. Mean and standard deviation were the statistical tools used to analyze the data collected for the study. While t-test was used to test the three null hypotheses formulated for the study at .05 level of significance. The findings revealed among others that the respondents agreed with all the 20 items as the techniques for motivating motor vehicle mechanic students' psychomotor skills development. The findings also revealed that the respondents agreed with all the 18 items as the challenges affecting motor vehicle mechanic students' psychomotor skills development. Finally, the findings revealed that the respondents agreed with all 16 items as the mechanisms that should be adopted towards improving motor vehicle mechanic students' psychomotor skills development. Based on the findings, the following recommendations were made; competent and skillful workshop attendants should be recruited, there should be a collaboration efforts between the teachers and workshop attendants of motor vehicle mechanic trade to improve students' practical skills acquisition, live vehicle should be made available training students how to drive and be licensed at the end of their programme, teachers should be motivated by improving their standard of living so that motivated teachers can easily motivate their students towards learning, Government should continuously organize an on-the-job training and seminars to keep teachers' skills relevant and dynamic.

TABLE OF CONTENTS

LIST OF TABLES

CHAPTER ONE

INTRODUCTION

1.1 Background to the study

The elevation of the human condition is the primary concern of education. Through education people develop their knowledge and skills, adopt new behavior and become better citizens. In Nigeria, education is perceived as the greatest force that could be used to achieve desirable change or development of the nation economically, politically and socially. A vital aspect of Nigerian education process is technical education. This type of education has been seen as the most reliable instrument for individual and societal survival and development in this changing world (Jatawa, & Mohammed, 2021). It is not gainsaying that the provision of technical education through any mechanism put in place will enable its recipient to be better, more useful and more productive citizens of the nation (Debrah, Vidal & Dinis, 2021).

Technical education is the catalyst for change in any nation that embraces its practices, that is to say technical education is a useful instrument that brings about improved economy. Different institutions were established to offer technical education, which include Technical Colleges, Polytechnics, Colleges of Education (Technical), Universities of Technology, Vocational Centers, Schools etc.

The National Policy on Education (NPE) as cited in Stephen (2020), has placed a premium on technical education in view of its role in technological and industrial development of the nation, it has described technical education as aspect of education which leads to the acquisition of practical and applied skills as well as basic scientific knowledge. Technical education aims at: Providing trained manpower in applied science, technology and business, particularly at craft, advance craft and technical levels; Providing the technical knowledge and vocational skills necessary for

agricultural, industrial, commercial and economic development; and Giving training and impact the necessary skills leading to individual for self-reliant (FRN 2014). Opara (2017) asserted that technical education laid emphasis is on skill-acquisition and sound scientific knowledge, which gives ability to the use of hand and machine for the purpose of production, maintenance and self-reliance.

Santoso, *et al* (2020) observed that apart from the inculcation of values, technical education also aims at inculcating intellectual knowledge; understanding and psychomotor skills which can make man live fully and contribute to the development of his society. Santoso, *et al* (2020) pointed further that, the ability of a man to use the things of this world to improve life and living depends on the type, quality and depth of education given to him.

Technical colleges in Nigeria have been training people to become craftsmen and technicians. Training qualifies them for jobs in both public and private sectors of the economy. Both sectors, according to Albayrak and Ziarati (2010), require well-trained and competent technicians who can operate and maintain the available technical equipment. Therefore, there is the need for technologically based skill training that ensures that students understand how their expertise fits into improving the society and fulfilling national goals.

Technical colleges as a technically bases skill practicing school offers Motor Vehicle Mechanics Work as a trade designed to equip every Nigerian students that offers the trade as a subject at the technical college level with psychomotor skills in motor vehicle maintenance, servicing and repair after graduation from school. Ogundele, Ogunniran and Abanikannda (2019) stated that one of the primary aims of the National Policy on Education that was designed by the Federal Government of Nigeria in (2014) was to equip every Nigerian child with basic skills that will enhance

them for the purpose of technological development and advancement in Nigeria. Wu, *et al* (2018) described Motor Vehicle Mechanics Technology as education that provides the students with the knowledge and skills with adequate practical experience.

The major goal of technical colleges where motor vehicle mechanics is offered, is to prepare students for successful employment in the labor market (FRN 2013). This condition can be met through a curriculum that is relevant, comprehensive and well equipped workshop with adequate instructional facilities, sufficient technical teachers and appropriate instructional methods. Unfortunately, technical skills acquisition in Nigerian Colleges are battling with numerous problems and most of the problems associated with psychomotor skills development were traced to: poor instructional methods, poor use of instructional facilities, lack of adequate safety practices and lack of proper maintenance practices has greatly affected students psychomotor abilities (Saba, *et al* 2019). The remedy to this situation is implementing techniques that will motivate the students towards learning.

Motivation is a key factor in learning. Akinseinde (2012) sees motivation as the ability of the teacher to arouse the interest of the students in what is being taught. According to him, to achieve this, the teacher should present a condition that will direct students motivation towards learning the subject matter. A lesson can be well designed in every respect but the students have to be motivated to learn. He also pointed that, it is the responsibility of the teacher to make the Learner's develop positive attitudes towards the subject matter.

If the course learnt is meaningful to the students, they become motivated and enthusiastic because they know the reason for learning. Motivation is also a force that determines how much effort an individual puts into his learning, (Sarafadeen, 2011).

He is of the view that motivation is all important for getting children to learn once their attention has been captured. Once the child is willing to learn, the battle is half won. He also said that external imposed motives such as threats of punishment or promises of reward always result in a shallow degree of learning than motives that are self imposed. Motivation in education can have several effects on how students learn and also their behavior towards the subject matter. It can; Direct behavior towards a particular goal. Lead to increased effort and energy. Increase initiation, and persistence in activities. Enhance cognitive processing. Determine what consequences are reinforcing. Lead to improvement of performance.

Because students are not always motivated internally, they sometimes need situated motivation, which is found in environmental conditions that the teacher creates. Therefore, guidance and counseling officers or orientation officers should ensure that adequate orientation is given to students at entry and subsequently in the course of the training (Sarafadeen, 2011).

To acquire psychomotor skills in technical education program such as motor vehicle mechanics technology at technical college level, opportunities must be provided for students to practice what they learnt. Małachowski and Korytkowski (2016) explained that a skill is a manual process acquired through repetitive performance of an operation. Psychomotor skill is cultivated over a length of time through repeated performance, in which a person is so used to doing something that he or she does not need to think too deeply while performing the task. When analyzing psychomotor skills, it is pertinent to note that these types of skills require input from both the physical perspective and the mental perspective. That is to say psychomotor skill is composed of the ability to learn how to balance the physical and mental attributes in order to achieve a certain goal. Usually these goals are aimed toward the realization of

an objective, such as driving a car. The dominating factor in psychomotor skills is the fact that individuals have become so used to these tasks that they do not need to think about them too much while performing the actions that compose the skills sets. While in the autonomic stage, the learner can improve the skill through practice, but no longer needs to think about the movement. The teacher has a great role to play in helping the child to develop his psychomotor skills through motivational techniques that will naturally influence the students desire to learn (Olabiyi, 2022).

1.2 Statement of the problem

Without development of psychomotor skills, Technical and Vocational Education and Training (TVET) will be of zero importance because the training received is practical work. It is the process of fully engaging the psychomotor abilities of students who undergoes the training. For this reason, it is expedient that deliberate efforts be made to ensure that TVET remain concrete rather than abstract.

Jatawa and Mohammed (2021) explained that graduates of technical colleges are expected to have been trained and acquire functional skills that will make them useful to themselves and the society in general. However, most graduates of these colleges especially Automobile graduates have little skills or no skills to show, this is clearly seen in the way the graduates of these institutions pass out without appropriate craftsman skills or technical skills needed for technological development. Agbaibe (2008) in support of the above assertion states that most products of technical colleges are unemployed, due to lack of appropriate technical skills from colleges. It is in respect of this alarming issue, that this study seeks to investigate the techniques for motivating motor vehicle mechanic students' psychomotor skill development in Technical Colleges in Niger State.

1.3 Purpose of The Study

The main purpose of the study is to determine the techniques for Motivating Motor Vehicle Mechanic Students' Psychomotor Skill development in Technical colleges in Niger State. Specifically the study sought to;

1. Find out the techniques for motivating motor vehicle mechanic students' psychomotor skill development in technical colleges in Niger State.
2. Determine the challenges affecting motor vehicle students' psychomotor skills development in technical colleges in Niger State.
3. Identify mechanisms that could be adopted for improving motor vehicle mechanics students' psychomotor skills development in technical colleges in Niger State.

1.4 Significance of The Study

The findings of this study will be beneficial to National Board for Technical Education (NBTE), the class teachers, students, industries and the society at large. The findings of this study would assist NBTE in curriculum planning and implementation that is focused on the techniques for motivating motor vehicle mechanic students' psychomotor skills development in technical colleges. It will assist them by clearly outlining the challenges affecting MVM students' psychomotor skills development in technical colleges, so that subsequent planning and adjustments of the curriculum could address the challenges identified. It will help them plan for continuous re-training of teachers for better services on application of mechanisms that should be adopted for improving motor vehicle mechanic students' psychomotor skills development in technical colleges.

In like manner, the findings will help teachers discover working techniques for motor vehicle mechanic students' psychomotor skills development in technical colleges. It will challenge the teachers to be deliberate towards addressing the challenges affecting motor vehicle mechanic students' psychomotor skills development in

technical colleges. The findings will recommend mechanisms that will assist teachers to help students, psychomotor skills development in technical colleges.

Similarly, the effects of the findings on both students and teachers will be an advantage to industries in a way that industries will subsequently spend less in training their employees. It will reduce the cost of training on the job.

Finally, the society will benefit greatly from this study because, the students having acquired the competency, will have the society as the terminal point.

1.5 Scope of the Study

This study is on techniques for motivating motor vehicle mechanic students psychomotor skills development in technical colleges in Niger State. The study investigated the techniques for motivating motor vehicle mechanic students' psychomotor skills development, the challenges affecting motor vehicle mechanic students' psychomotor skills development and the mechanisms for improving motor vehicle mechanic students' psychomotor skills development in technical colleges in Niger State.

1.7 Research Questions

The following research questions were formulated to guide the study.

1. What are the techniques for motivating motor vehicle mechanic students' psychomotor skills development in technical colleges in Niger State?

2. What are the challenges affecting motor vehicle mechanic students' psychomotor skills development in technical colleges in Niger State?

3. What are the mechanisms that can be adopted for improving motor vehicle mechanic students' psychomotor skills development in technical colleges in Niger State?

1.8 Hypotheses

The following null hypotheses were formulated and tested at .05 level of significance to guide the study.

$H0_1$: There is no significant difference between the mean responses of motor vehicle mechanic teachers and students on the techniques for motivating motor vehicle mechanic students' psychomotor skills development in technical colleges in Niger State.

$H0_2$: There is no significant difference between the mean responses of motor vehicle mechanic teachers and students on the challenges affecting motor vehicle mechanic students' psychomotor skills development in technical colleges in Niger State.

$H0_3$: There is no significant difference between the mean responses of motor vehicle mechanic teachers and students on mechanisms for improving motor vehicle mechanic students' psychomotor skills development in technical colleges in Niger State.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

The review of related literature was arranged under the following sub-headings:

1. **Conceptual Framework**

Technical colleges in Nigeria

Motor vehicle as a trade in Technical colleges

Psychomotor skills development theory

Theory of motivation

Techniques for motivating students' psychomotor skills development

Challenges affecting students' psychomotor skills development in technical colleges

Mechanisms for improving motor vehicle mechanic students' psychomotor skills development in technical colleges

3. Related Empirical Studies

4. Summary of Reviewed Related Literature

Conceptual Framework

Technical Colleges in Nigeria

Technical education is defined as any form of education whose primary purpose is to prepare an individual for employment in recognized skilled occupations that require expertise skill (Okoro, 2003). Jatawa and Mohammed (2021) sees technical education as education which equips individual with the skills; knowledge and understanding that can make one live fully and contribute to the development of his or her society.

The Nigerian National Policy on Education defines technical and vocational education as a comprehensive term referring to those aspects of the educational process involving in addition to general education, the study of technologies and related sciences and the acquisition of practical skills, attitudes, understanding and

knowledge relating to occupations in various sectors of economic and social life (NPE, 2013). Technical education can therefore be seen as the formal training of persons to become technicians in different occupations. Thus, any education that is geared towards teaching technical skills and attitudes suitable to such skills can be regarded as technical education. In his own views, Uwaifo (2009) posited that technical education is the training of technically oriented personnel who are to be the initiators, facilitators and implementers of technological development of a nation. He opined that this training of its citizenry on the need to be technologically literate, would lead to self-reliance and sustainability. He stressed that technical education, more than any other profession, has direct impact on national welfare. Furthermore, technical education contributions are widespread and visible ranging from metal work technology, automobile technology, electrical and electronic technology, building and woodwork technology etc. Consequently, technical education can serve as change agents not only for technical systems but also for many other societal changes. The practical nature of technical education makes it unique in content and approach thereby requiring special care and attention (Habeeb, 2015). Technical Colleges are regarded as institutions designed to prepare individuals to acquire practical skills, basic and scientific knowledge and attitude required as craftsmen and technicians at sub-professional level (FRN, 2004).Consequently, the goals of technical education as contained in the National Policy on Education (2013) are to:(a) Provide trained manpower in the applied sciences, technology and business particularly at craft, advanced craft and technical levels;(b) Provide the technical knowledge and vocational skills necessary for agricultural, commercial and economic development;(c) Give training and impart the necessary skills to individuals who shall be self reliant economically. In the view of the above objectives, the philosophy of technical

education according to Ojutari and Lawal (2008) is to provide saleable skills to the youths and make them more labour assets for industries and useful to the society. United Nations Educational, Scientific and Cultural Organization (UNESCO) (2001) refers to technical and vocational education as the principal conceptual term to describe the range of vocational education and training programmes covered by the international instrument.

The National Board for Technical Education (NBTE) (2005) stated that in Nigerian school system, the programmes for the education and training of craftsmen and master craftsmen for the maintenance of all types of motor vehicles are carried out in Technical Colleges at the National Technical Certificate (NTC) and Advanced National Technical Certificate (ANTC) levels, respectively (Odigiri & Emmanuel, 2010).Broadly explained, Technical Colleges are concerned with the acquisition of knowledge and skills from the world of work (Grunwald *et al*,2005). Technical Colleges can be described as a comprehensive school of learning referring to those aspects of the educational process involving, in addition to general education, the study of technologies and related sciences, and the acquisition of practical skills, attitudes, understanding and knowledge relating to occupants in various sectors of economic and social life (Egboh, 2010). Technical education is a vocational course that requires preparation of students for jobs involving applied science and modern technology; compared to vocational education (which focuses on the actual attainment of proficiency in manual skills). Technical education emphasizes the understanding of basic principles of Science and Mathematics and their practical applications; delivered at upper secondary and lower tertiary levels to prepare students for occupations that are classified above the skilled crafts but below the scientific or engineering professions (Tripney et al., 2012). Onyemachi and Ekong (2009) observed that the

present state of technical education has not been promising. They added that all human and material resources required for the successful execution of this education should be given adequate attention by government and policy makers. As part of policy planning, the limited resources allocated to run the automobile technology workshop should be used with all types of techniques and ideals following the determined process to achieve the general goals of technical education. Odu (2006) revealed that lack of proper skill management such as training of technical teachers; provision and maintenance of technical facilities are what is killing the Technical Colleges programmes.

Motor Vehicle Mechanics Work as a Trade in Technical Colleges

Evan-Pughe (2004) defined motor vehicle as a "Car". Car is a motor vehicle on wheels for carrying people. Motor is any machine that produces mechanical power. Mechanic is the practical study of machinery. Motor vehicle is a generic term for a self-propelled, trackless, non-articulated, four-wheeled land vehicle which encompasses passenger cars, recreational vehicles, taxies and buses used to transport people in cities, on highways or across country. Motor vehicle consists of chassis. The frame of motor vehicle according to Dolan (2010) consists of; The body shell; it forms the skeletal of the vehicle.· The engine; it is the power component of the vehicle viz-viz; the internal combustion engine, an engine in which the combustion of fuel occurs with an oxidizer (air) in a combustion chamber that is an integral part of the working fluid flow circuit. Example includes six-stroke piston engine, four-stroke, two stroke and the wankel rotary engine (engine with rotor instead of a piston).· Transmission system; aids in transferring the drive from the engine to the wheels, its main components are the clutch, gearbox, final drive and differential.· Suspension system; it is used to connect the wheels to the body of the

chassis frame· Steering: It control the path taken by the vehicle.· Brakes: It reduce or stops the vehicle.

Electrical system: It supplies the required electrical energy for starting, lighting, and vehicle accessories.

Heather (2002) stated that motor vehicle mechanics work involves the application of scientific knowledge in the design, selection of materials, construction, operation and maintenance of the motor vehicle. Motor vehicle according to David (2004) means vehicles particularly one for passengers, carrying its own power generating and propelling mechanism, for travel on ordinary road.

Mechanism means any mechanical means for the conversion of control of motion or the transmission or control of vehicle. It is the structure or arrangement of parts of a machines or similar device or of anything analogous. For proper mechanism of motor vehicles, the motor vehicle mechanics work teacher requires conventional skills and modern technology in order to impart or convey the required saleable practical skills to motor vehicle mechanics work students. That is, the motor vehicle mechanics teachers need to improve themselves with the currents ways, methods and procedures or producing cars, designing, servicing, and repairing an overhauling of vehicles. The motor vehicle services field offers many career opportunities for anyone who is mechanically inclined and has the educational background. This background includes: servicing of injector, vulcanizing, engine repair, gear repair, refrigeration and painting, body build and electrical repair. Motor vehicle mechanics work education deals on methodology of imparting knowledge of automobile education to learners and graduates; this should be done using on-the-job training. The motor vehicle mechanics work teachers should improve themselves by retraining with modern machines, equipment, tools that would enable them to prepare a solid background for motor

vehicle mechanics work graduates to meet the required saleable skill in the motor vehicle industry. There should be training of pre-service teachers and retraining of in-service teachers of motor vehicle mechanics work to meet-up with the modern ways of imparting motor vehicle mechanics work skills. According to Awotunde (2013), Nigeria having realized the effectiveness of technology education as a powerful instrument for national progress and development, adjusted her educational philosophy and methodology to match the ideals and challenges of changing technology and social structure of modern society. Ogwu (2007) pointed out that one of the objectives of motor vehicle mechanics work in Technical Colleges is to educate and train students with modern technology for productivity and ability with which they can secure and hold employment and be able to profit from it. National Policy on Education (NPE) (2013), indicates that the goals of technical and vocational education shall be to:(a) provide trained manpower in the applied sciences, technology and business particularly at craft, advanced craft and technical level;(b) prove the technology knowledge and vocational skills necessary for automobile, commercial and economic development;(c) give training and impart the necessary skills to individual who shall be self-reliant economically;(d) be institutions that are trusted with the required professional training of automobile graduates must contin gouously meet the required minimum standard as stated by NBTE, NUC and others; Technical Colleges, Polytechnic, University technology, Faculties of education with technical and vocational education.

Psychomotor Skill Development Theory

Obi, Ezenwafor, and Okoye, (2018) sees Psychomotor" development as the changes in a child's cognitive, emotional, motor, and social capacities from the beginning of life throughout fetal and neonatal periods, infancy, childhood, and adolescence.

Technical education progrmme is generally known as a programme which leads to the acquisition of psychomotor skills through work-experience. The oxford dictionary of current English defines 'Skill' as the ability to perform expertly, facility in performance, dexterity and tact. In adding the 'Psychomotor' gives it a comprehensive definition. Psychomotor skill is concerned with muscular skills and coordination. Obi *et al,* (2018) highlighted that various terms used to refer psychomotor skill are motor skill, manual skills, and technical skills among others. Eze (2010) defined psychomotor skill as those skills that require the subject to have the capacity to coordinate sensorial information and muscular response in order to perform a determined task. Furthermore in the view of Nwachukwu and Okoye (2016) psychomotor skill domain emphasize motor skill as manipulation of materials or objects or an act which require neuromuscular coordination. According to the authors these skills are involved in controlling muscles signaled by the brain and motor neural pathways resulting in purposeful movement. Obi, *et al*, (2018), stressed that Psychomotor skill as a well-established habit of doing something involves the acquisition of skill and capabilities in the most economical way. This means that in psychomotor skill development, skill is a level of proficiency achieved on a specific task or group of tasks through practice. Eze (2010) went further to explain psychomotor skill as the ability to bring about some end result with maximum certainty and minimum out lay of energy or of time and energy. Psychomotor skill in technical education involves activities that need the coordination of the finger and hand movement as a result of cognitive planning. The activities might include several tasks in electrical installation as installing, maintaining, wiring and drawing.

Skill Development

Skill development according to Ferris and Aziz (2005) refers to the explicit physical

activities/actions or the outcome of a task. This means the capability of the individuals to understand the processes and outcomes required, leading to permanent changes in their performance. Therefore, psychomotor skill development is the ability to learn a skill and perfect in that skill when put to test. Psychomotor skill development can be proficiency in installing, maintaining or operating a machine. In the view of Ombugus and Umaru (2016), skill development is best defined from the point of view of the learner, as the process of obtaining knowledge of technical ability from an individual, group, or institution and in turn imparts such knowledge to others. Ombugus and Umaru further stated that psychomotor skills are usually aimed at practical purposes. Psychomotor skill development is aimed at ensuring self-reliance for the end products and thus practice must be emphasized over theory. Bello and Aliyu (2012) emphasized the need for practical training is to make psychomotor skills more functional. The authors further stressed that if theory takes a higher proportion of a psychomotor skill training scheme, the outcome may not meet the expectations of either the trainees or the society.

The FGN (2014) stated that technical and vocational education shall be self-reliant economically. Contributing, Ombugus (2015) asserted that technical education philosophy was built on the production of graduates who will be equipped with necessary skills and knowledge that will not only enable them fit into already existing job opportunity in the society, but will also empower them with skills that will enable them establish on their own and create job opportunity for others. Skill training in technical education and particularly in motor vehicle mechanic works trade should emphasize psychomotor skill development over cognitive and effective skills. In view of this Okeme (2011) stated that psychomotor skill development is central in technical education. Okeme asserted that psychomotor skills have cognitive action, the

receiving and the use of perceived symbols, the aid of a value system, and physical action or movement. Teachers of technology are therefore, expected not only to possess relevant production skills but also are required to know the process of developing psychomotor skills. This will enable teachers to select appropriate teaching methods and techniques that will guide them in teaching students most effectively and efficiently. An understanding of the process by which psychomotor skills are achieved is a basic condition for effective technical education and training in motor vehicle mechanic works.

The studies in skill development theories have culminated into the six levels of psychomotor skill developments. These levels are perceiving, motivation, imitation, performing, adopting and innovation.

Perceiving: The first step in the process of developing psychomotor skill is to perceive the wanted skill or describe action. Hammond and Lamar in Nweke (2010) stressed that the teachers should develop in the students a strong desire to possess the manipulative ability. They should be genuinely interested in their skill development. It may be desirable to have students see a product that has been produced by a skilled person or in some cases, see a skill performance while it is in progress. The authors then concluded that teachers should see that the students have a clear and correct picture or (perception) of what is to be achieved otherwise, not much improvement can be achieved.

Motivation: Motivation or incentive is crucial to the process of developing psychomotor skills. Setting goals and/or solving problem must be the first step in creating motivation in the learner or trainee. According to Stallings in Nweke (2010), motivation involves satisfaction of needs, rewards and/or punishment. Initial arousal of an intention seems to be a pre-requisite which operates as a trigger for

further action. There are indications that engaging in an activity and practising are meaningful only when the learner shows an appropriate indication of motivation or incentive seems to be the activator and sustainer of action or thought when developing psychomotor skills. Gague in Nweke (2010) pointed out that various kinds of external stimulation and positive feedback make possible a high level of development in psychomotor skills. In teaching and learning process both internal and external sources of motivation should be employed. Without effective motivation or incentive psychomotor skills would not be developed or may be poorly attained.

Imitation: Imitation is the stage where the learner is involved in mental manipulation of the formed pattern or sequence and/or mimicking a series of events, patterns or procedures .The role of the learner, according to Singer in Nweke (2010) is to first combine the appropriate movements in correct sequence or order. In psychomotor skill development, the learner receives the necessary cues, mentally manipulates cues and organizes them into series of set before attempting to perform the function. Thus the author recommended that before embarking on any action, the performer ideally should have knowledge about the goal of the act together with some understanding of the steps through which the goal can be accomplished. It is expected then that the learner should manage the series of events as they unfold at every aspect of development. As a practical way of assisting to imitate, Gall in Nweke (2010) advised that the teacher should ask the students to name the important steps in doing what they are now ready to do. Gall further stated that the teachers should demonstrate the procedure if it is difficult for the students to understand. This implies that teachers should show and explain how to perform each operation step by step. The students should be made to go through the process, each trying their hands on it. Performing the operation is necessary in developing psychomotor skill.

Performing: Following the internalization of the mental picture of the steps or sequence required by the performer, the learner must engage in repeated practice. Padelford in Nweke (2010) described practice as a movement of the body according to the pattern the mind has been organized. Practice is a necessary pre-requisite for learning a task. Students of vocational and technical education (motor vehicle mechanics inclusive) need to be given enough opportunities to practice what they have learnt in theory lessons. Udofia, Ekpo, Nsa and Akpan (2012) observed that in teaching a motor or assembling skill, the experience in the actual task itself is the critical variable. Eze (2018) commensurate this by stating that work experience will be effective in proportion to the specific experience for training habits of doing and thinking through repetitive performance.

Adapting: According to Padelford in Nweke (2010), adapting involves diagnosing and problem solving and the added dimension of creativity. The author recommended that certain psychomotor skills should be adaptable to new situations. Motor vehicle mechanic teachers should emphasize adaptive learning. This stems from the fact that transfer of learning is often required in problem-solving situation, which is a typical characteristics of production industry.

Innovation: This is the highest level of psychomotor skill development which emphasizes the ability to experiment and create new forms of learned skills. Singer in Nweke (2010) stressed that the opportunity to express feelings and to gain a feeling of self-actualization are inherent in the innovation act. Innovation posed a challenge and an opportunity for fulfillment of positive self-concept.

In improving psychomotor skill development during a skill session, the following steps will help to improve skill development (Nwachukwu& Okoye, 2016). Have all necessary tools/equipment set up before session begins, Use realistic and current

tools/equipment that is in proper working order, Allow ample practice time in class, at breaks and during other times, Always model correct psychomotor skills behavior, Keep students active and involved, Insist that students respect tools/equipment and that they are using the right tool for the right job, Ensure competence in the individual skill before using scenarios, If available, video tape and audio tape may also be helpful.

According to Obi, *et al*, Satisfactory development of psychomotor skill is expected within the daily routine and is embedded within the integral components of work and life-related developments. It is essential to incorporate various styles of teaching and learning psychomotor skills, as well as to document mastery through the use of specific behavioral objective. This paradigm provides a practical approach to instruction in psychomotor skill development and competence (Olson, 2008).

Concept of motivation

Svinicki (2016) affirmed that the issue of motivating students remains one of the topics of greatest interest to faculty. She further exclaimed that Teachers still are puzzled about how to motivate students Yarborough &Fedesco, (2020) similarly lament that Fostering student motivation is a difficult but necessary aspect of teaching that instructors must consider. Sharing their experiences, expressed that there are times we lead classes where students are engaged, motivated, and excited to learn, and sometimes classes where students are distracted, disinterested, and reluctant to engage or, probably, classes that are a mix. What factors influence students' motivation? How can instructors promote students' engagement and motivation to learn? While there are nuances that change from student to student, there are also models of motivation that serve as tools for thinking through and enhancing motivation in our classrooms. According to Svinicki (2016) the one general principle underlying all current theories

of motivation that has grown is the learner's beliefs and interpretations of what is happening that make something motivating or not. For instance, the very same situation can have different effects depending on each learner's interpretation. One learner could view receiving corrective feedback as demotivating, whereas another learner might see it as a positive impetus for trying again, but harder. As a result, contemporary theories of motivation reflect psychology's current view of learners as agents in charge of their own learning. It is the learner's perspective that results in motivation or lack of it. All the instructor can do is create an environment that is most likely to support students' development of a positive perspective that lies at the basis of what is now called the growth mindset' (Dweck, 2006). Growth mindset is the believe that ability and intelligence are malleable and can grow with experience and effort (Dweck, 2006). We can see that if an individual adopts a growth mindset, it colors his or her whole approach to learning. Learning becomes a worthwhile activity deserving of effort and persistence because it can result in change.

Models of Motivation

According to Svinicki (2016) and Yarborough &Fedesco, (2020) there are models of motivation that serve as tools for thinking through and enhancing motivation in our classrooms. This guide highlighted three frameworks: the expectancy-value-cost model of motivation, the ARCS model of instructional design, and self-determination theory. These three models highlight some of the major factors that influence student motivation, often drawing from and demonstrating overlap among their frameworks. The aim of this guide is to explore some of the literature on motivation and offer practical solutions for understanding and enhancing student motivation.

Expectancy, Value, Cost Model

The purpose of the original expectancy-value model was to predict students' achievement behaviors within an educational context. The model has since been refined to include cost as one of the three major factors that influence student motivation. Below is a description of the three factors, according to the model, that influence motivation. Expectancy refers to a student's expectation that they can actually succeed in the assigned task. It energizes students because they feel empowered to meet the learning objectives of the course. Value involves a student's ability to perceive the importance of engaging in a particular task. This gives meaning to the assignment or activity because students are clear on why the task or behavior is valuable. Cost points to the barriers that impede a student's ability to be successful on an assignment, activity and/or the course at large. Therefore, students might have success expectancies and perceive high task value, however, they might also be aware of obstacles to their engagement or a potential negative affect resulting in performance of the task, which could decrease their motivation.

Three important questions to consider from the student perspective:

1. Expectancy - Can I do the task?

2.Value - Do I want to do the task?

- Intrinsic or interest value: the inherent enjoyment that an individual experiences from engaging in the task for its own sake.

- Utility value: the usefulness of the task in helping achieve other short term or long-term goals.

- Attainment value: the task affirms a valued aspect of an individual's identity and meets a need that is important to the individual.

3. Cost - Am I free of barriers that prevent me from investing my time, energy, and resources into the activity?

Its important to note that expectancy, value and cost are not shaped only when a student enters your classroom. These have been shaped over time by both individual and contextual factors. Each of your students comes in with an initial response, however there are strategies for encouraging student success, clarifying subject meaning and finding ways to mitigate costs that will increase your students' motivation. Everyone may not end up at the same level of motivation, but if you can increase each student's motivation, it will help the overall atmosphere and productivity of the course that you are teaching.

Theories of Motivation

Brech (2015) defined Motivation as a general inspiration process which gets the members of the team to pull their weight effectively, to give their loyalty to the group, to carry out properly the tasks they have accepted and generally to play an effective part in the job that the group has undertaken,

Abraham Maslow (1943, 1962 and 1987) a theory of human motivation. Maslow widely cited works on motivation (web, 2018). The theory states that "The higher up in the hierarchy a student is, the better the motivation and therefore the student will experience more effective learning". Those needs are physiological needs, safety needs, love and belonging needs, esteem needs, and self-actualization needs.

The physiological need of the students is of utmost importance and holds the first level in the hierarchy of needs. These needs are the most basic related to a person's survival. This may include food, water, and shelter. If the physiological needs have not been met, the teacher should understand that students may not be able to focus fully on learning. So, as a teacher, how can you make sure your learners' physiological needs are met? Make sure you provide adequate lighting, space,

ventilation (heating or cooling), refreshments or drinking water at least, offer toilet breaks etc.

The second level consists of safety needs; student safety needs play a critical role in achieving student success. A safe environment is not limited to physical parameters. Students must not only feel physically safe in the classroom but emotionally and psychologically as well. An environment must be provided where students feel free to ask questions and share ideas without being mocked by other students or reprimanded by the teacher. The student must feel safe in the classroom and the learning environment before progressing to the next step in Maslow's hierarchy the need for belonging.

In the third level of Maslow's hierarchy, students need to feel a sense of belonging and love. At this level, students need to identify with other students and need to feel that they fit in. The student must feel that he is important as an individual and as part of the group. This is can be promoted in your classroom by having sensible ground rules about respect for everyone and using inclusive learning techniques like group work.

Once all previous needs are met, the student may then move to the next level: The need for self-esteem i.e. self-confidence. It is at this level that the student is most receptive to learning and wants to achieve a good level of self-esteem through recognition and achievement. Now the students feel confident in their ability to learn and become confident enough to take responsibility for their own learning. To satisfy the self-esteem needs of your learners, you can get them involved in learner-centred activities such as peer-teaching and peer assessment.

At the fifth level, self-actualisation becomes the motivating factor. According to the hierarchy, at the fifth level, the students proactively look for ways to fulfil their

potential for learning and seek fulfilment. At this level, students will strive for higher learning goals and seek to achieve them, such as the aim to get an ‘A’ grade on their assignments, help one another and contribute and engage with the learning.

Taking all of the above factors into account, it is needless to say that Maslow’s Hierarchy can be used to enhance learning through motivation. When all levels of Maslow’s Hierarchy of Needs are met, students show their full ability and eagerness for learning. The higher up in the hierarchy a student is, the better the motivation and therefore the student will experience more effective learning.

McGregor maintained that there are two fundamental approaches to managing people. Many managers tend towards theory X, and generally get poor results. Enlightened teachers/managers use theory Y, which produces better performance and results and allows people to grow and develop.

The first part of McGregor’s theory is Theory X. Managers have many assumptions about their employees in Theory X:

Workers dislike their jobs and they are inherently lazy.

Workers have little motivation and prefer direction from their superiors.

Workers need consistent rewards and punishments to ensure their task is completed.

Workers do not have a desire to grow or achieve personal or professional goals.

A person refusing to work (‘X’) and a person cheering the opportunity to work (‘Y’)

Many of these assumptions are based on basic physical needs. Businesses who utilize a Theory X approach often have multiple levels of management with a low rate of delegation. Workers are often micromanaged and have very little autonomy in the organization. There is often a central authority base and managers follow an authoritative leadership style.

The next part of McGregor's theory is Theory Y. Managers also have assumptions about their employees in Theory Y:

Workers are willing to accept challenges and are proud of the work that they do.

Workers do not need to be micromanaged; they are self-directed.

Workers are eager to participate in decision-making.

Workers are happy to contribute and feel internally satisfied.

These assumptions lead to a better managerial approach and this greater satisfaction in the workplace. McGregor encouraged organizations to adopt more of a Theory Y leadership style. It is much more decentralized and requires more participation from the managers, but assumes that workers would also be committed to the long-term goals of the company. He believed that by following Theory Y, supervisors could motivate their workers to achieve their highest potential.

There are many similarities between Theory X Theory Y and Abraham Maslow's Hierarchy of Needs. Maslow's theory uses a pyramid to describe the different types of needs that need to be met. Each level, or type of human need, can only be achieved if all of the levels below are satisfied, starting with basic needs at the bottom. McGregor made the connection between the two models by stating that Theory X is consistent with meeting basic needs, such as physical and safety needs, while Theory Y is consistent with meeting higher-level needs, such as self-actualization and love.

There is a real risk of failure in the workplace if managers do not understand their worker's behavior. Many workplaces originally utilized Theory X, which believes that employees are lazy and unproductive. This led them to use rewards and punishment as their primary means to motivate employees. In a strict environment with little autonomy, workers were indeed unhappy and lacking ambition. McGregor

suggested that organizations would experience greater success if they focused on satisfying interpersonal needs, which led to the development of Theory Y.

While McGregor's theory was developed to improve motivation in the workplace, it has been recently used in the school system. Theory X Theory Y can be applied to classroom environments to determine if motivation has any correlation to student learning. It has been discovered that the intrinsic feedback given in the classroom setting has the greatest effect on motivation and learning.

Educators who believe in Theory X would agree with the following statements:

The instructor is responsible for actively sharing their knowledge with the students.

Students are not motivated to learn new information.

Students prefer to have the instructor direct their learning and not take on that responsibility themselves.

The instructor must ensure a controlled learning environment to prevent cheating and necessitate student learning; the students prefer to have the material summarized for them.

Students find learning inherently challenging and are only expected to have limited success in the course.

Educators who believe in Theory Y would have different assumptions:

Students are naturally predisposed to learn.

Responsibility for their own learning will be as natural to the students as other responsibilities.

Students experience self-satisfaction when they learn and this is enough to motivate them to meet their learning goals.

It is not necessary to threaten students with lower grades; they are not naturally lazy.

Traditional classrooms do not enable the potential of almost all students.

Students have large amounts of creative thinking and innovation that is applied throughout their learning journey.

This enables them to modify their leadership style accordingly and create systems that motivate their workers.

Techniques of Motivating Students Psychomotor Skill

Teaching techniques can be defined as an integrated organization that includes a set of materials, devices, tools, and educational attitudes that the teacher uses to clarify an idea or to change a vague concept in order to contribute to a better state of the educational process.

Teaching strategies are known as the approaches and techniques used by teachers to deliver the course content for pupils. Generally, teaching strategies focus on achieving the goals and objectives of the lessons. Using teaching strategies, teachers can help students in their learning process. Moreover, teachers may use distinct teaching strategies according to the subject, class size, and the level of the learners. The strategies used for lessons may vary from one another.

According to Saba *et al,* (2019) for effective development of psychomotor skills, the following techniques must be considered; Effective and functional instructional facilities, adequate Safety practices in Workshops/Laboratories and proper Maintenance of equipment and facilities. They explained that facilities are group into three, teaching facilities, training equipment as well as physical facilities. They also stressed that engineering and technology education discipline that lays much emphasis on skill acquisition cannot function well without adequate provision and use of facilities like books, equipment, tools, materials, workshop and laboratories. This is because skills are not acquired in the air or with empty hands. For effective teaching and learning, four major elements have been identified namely; the learner; the

curriculum; the teacher and the facilities. They also explained appropriate use of instructional methods as a skillful ability of technology teacher to use different methods in rotation and combination as will be indicated by the existing needs. Sometimes, teachers create class activities that go along with teaching strategies. The use of strategies helps the learners to engage and practice different skills. Especially, skills like problem-solving, critical thinking, and decision making are developed with the use of effective and appropriate teaching strategies in the class. Saba *et al,(2019)* , The workshop contains many potential safety hazards. These hazards can be eliminated through proper control. Instructors have an important role to perform in workshop safety as they help to unveil unsafe situation and practices thereby reducing accident rate. Instructors could build care and confidence in their students by the manner of handling tools and equipment. Regulation approaches would vary from instructor to instructor but it is necessary for instructors to be fully aware of the hazards and risk in the workshop/laboratories and thus prepare the workshop environment in line with standard factory act to ensure safe work environment and this will motivate learners to learn skills. Teachers and instructors must never loose sight of the significant of maintaining tools and equipment in the laboratory/workshop as it plays critical role in motivating students to learn skills. Maintenance according to Saba (2006), is the act of taking good care of tools and equipment to prolong its lifespan and to prevent it from sudden breakdown. Jarret (2000) sees maintenance as a process whereby machines are constantly checked and faults rectified to avoid any loss in man-hour and to increase production. In other to motivate students to learn skills, it is necessary for instructor to always maintain equipment and tools (Saba *et al*, 2019). Jatawa & Mohammed (2021) reported their major findings on strategies for improving skill acquisition among automobile students saying that varieties of

teaching methods such as questioning, demonstration, assignment, field trip, computer animation are to be emphasized in teaching automobile courses. That teachers and technologist are to direct, oversee, guide, encourage team work, interact freely, evaluate and give room for improvisation while students are on practical activities. Automobile workshop and college management are to generate funds for procurement of workshop facilities and set modalities for maintenance. That colleges are to give more emphasis on in-service, departmental or in- house seminars, conferences, part time programmes for automobile teachers.

Challenges Affecting Students' Psychomotor Skills Development

Woyo (2013) observed from most literature that the socio economic environment and the contextual framework in which TVET delivery systems currently operate in Africa is characterized in general by uncoordinated, unregulated, and fragmented system. Woyo further objected that there is a great variance between what institutions are producing and what industry and commerce demands due to the fact that there is no interdependent relationship between the two. Tika, Gowon, and Aishatu, (2013)reported from their research findings, challenges in implementing psychomotor skills is due to difficulty in organizing practical lessons, insufficient tools, and insufficient materials. They discovered other challenges to include insufficient time for practical lessons, school administrators shows little or no interest in regular organization of practical lessons and workshop attendants lack adequate qualification to support trades practical lessons. Woyo (2013) reported similarly that there is an acute shortage of training materials and workshops to conduct training and in the end this compromise the quality of the graduates. While everyone appears to be wondering why Nigeria has failed to develop as it should, despite its vast human resources and stupendous oil wealth, Victor, (2009) unveiled that neglect of technical

education is robbing the nation the contributions its graduates would make to national development. This negligence is due to lack of deliberate efforts to actualize the existing goals through the wonderful policies and strategies in place already.

Mechanisms for Improving Motor Vehicle Mechanic Students Psychomotor Skills Development in Technical Colleges

While it is important to adopt techniques that will motivate MVMW students' psychomotor skills development towards practical abilities during instruction, it is more important for automobile curriculum planners to continuously devise mechanisms that will improve the trade to international standard. Mechanisms should be put in place to improve the standard of automobile trade in technical colleges- this will attract young people to enroll into the training and also ensures that the process is effectively sustained in other to produce competent MVMW graduates.

Tika *et al*,(2013)recommended that States government should provide standard workshops in the colleges, supply adequate instructional materials in the colleges so that each students can get the opportunity to learn the required skills, States government should recruit and re-train qualified trade teachers for effective implementation of the curriculum, College administrators should intensify internal supervision by drawing up supervision schedule. This will go a long way in implementing the various trade curriculum. The National Board for Technical Education (NBTE) should intensify accreditation of trades in Technical colleges to ensure standard across the country.

Related Empirical Studies

Olaitan, Ike, and Obe (2015) carried out a study to identify Motivational strategies for skill Empowerment of Technical College Graduates in Motor Vehicle Mechanic and Electrical Installation work in partnership with Local Government Authority in Enugu

State. Three research questions in line with the specific purpose of the study were stated to guide the study. Descriptive survey research design was adopted for the study. The population for the study was 85 comprised of technical college Motor Vehicle Mechanic Work and Electrical Installation teachers and supervisors of education at the local government authority. The entire population constituted the sample because of the manageable size of the population. A Forty one (41) item questionnaire was developed from the literature and used for data collection. Three experts from the Faculty of Vocational Technical Education, University of Nigeria, Nsukka validated the instrument. Cronbach alpha reliability method was used to determine the internal consistency of the instrument. A reliability coefficient of 0.76 was obtained. The data were analyzed using the mean and standard deviation to answer the research questions. It was found out from the study that 22 motivational strategies could be provided before enrolling in Motor Vehicle Mechanic Work and Electrical Installation, 13 motivational strategies could be provided during the programme, and 6 motivational strategies could be provide after the programme (Motor Vehicle Mechanic Work and Electrical Installation) in partnership with Local Government Authority in Enugu State. It was therefore recommended that the Government of Enugu state should use these identified motivational strategies to lure the technical college graduate to enroll in the Motor Vehicle Mechanic Work and Electrical Installation training at any skill acquisition centre empowered to carry out the programmme for training. The major relationship between the reviewed literature and the current study is outlined as follows; motivational strategies for empowerment of skills, the study was on Technical colleges graduates in motor vehicle mechanic works and electrical installation work. The major differences between the two researches are also outlined as follows; the reviewed literature focused on graduates in

order to help them not to abandon their discipline and help them with start-up capital, it also combined two trades that is MVMW and EIW, and the study was carried out in Enugu State. While the current study is focused on Students in training, limited to only MVMW and it'll be carried out in Niger State.

Jatawa and Mohammed (2021) In their research on strategies for improving MVM Students' cognitive and Psychomotor skills acquisition in Government Technical colleges in Yobe and Gombe States opined that skills acquisition remains the major goal of vocational and technical education. The inherent problems associated with skills acquisition may not be attributed to a single factor. This study on strategies for improving Automobile students' technical skills acquisition in science and technical colleges in Yobe and Gombe is a study that identifies instructional strategies, supervisory strategies, strategies for improving state of Automobile workshop facilities and training strategies, which if adopted and maintained will improve automobile students' technical skills acquisition. A survey research design was adopted for the study, the total population of 76 respondents were used for the study representing 14 principals, 49 automobile teachers and 12 workshop attendants. A self structured questionnaire with four sections of 20 items on a four point rating scale was used as instrument for data collection. The reliability coefficient of the instrument was 0.78 determined using split half statistical method. Four research questions were designed for the study. Mean and standard deviation were used to answer the research questions, Tables were used to present the data. The major findings of the study were: varieties of teaching methods to be used within a lesson, computer animation be used in illustrating operations that cannot be seen practically, also the study revealed that workshops are to generate funds for procurement of facilities. The study further revealed that college management must emphasis on in-service, departmental or

in-house seminars, conferences, part time programmes for automobile teachers among others. From this review it is very obvious that a similar burden of making making Motor vehicle mechanic works a concrete experience among Students who undergoes training in this trade is the researchers. While the reviewed literature focused on Strategies for improving Automobile students' Technical skills in science and technical Colleges in Yobe and Gombe States, the current study is specifically focused on Techniques for Motivating Motor Vehicle Mechanic Students Psychomotor skills development in Technical colleges in Niger State

Saba et al (2019) Explained the techniques of motivating students in learning psychomotor skills in engineering and technology education programme. It enhances understanding of techniques of motivating students to learn psychomotor skills in engineering and technology education. It explained major concepts and enumerated the strengths associated with the utilization of instructional materials; criteria for selecting instructional materials for utilization. This chapter also unveiled the points to be observed for effective utilization of instructional materials as well as the safety precautions in workshops/laboratories. It also explained maintenance and clarify the most appropriate maintenance approaches to adopt at a particular time and condition. The chapter gave detailed reasons and justification for cultivating positive maintenance culture among teachers in schools. The chapter also gave evaluation/ self assessment exercises to ascertain learners understanding of techniques of motivating students to learn psychomotor skills in Engineering and Technology Education. This particular literature forms the basis for the current research in that it clearly expose the motivational Techniques of Developing Students Psychomotor skills. While the reviewed literature focused on Students in engineering and technology education

programme, the curiosity of this current study is specifically on Motor vehicle mechanic works Students at Technical colleges level.

Danladi (2018) carried out a research study to ascertain techniques of motivating students psychomotor skills development in Electrical Installation and Maintenance Work trades in Technical Colleges (TMSPSDEIMWT) in Niger State. A survey research design was adopted for the study. The population for the study was 302 respondents comprised of 9 instructors and 293 Students of electrical Installation and maintenance work trades. 110 were randomly selected as sampling techniques. A structured questionnaire named Techniques of Motivating Students' Psychomotor Skills Development was used as Instrument for data collection and validated by three expert lecturers. The reliability of the instrument was established using Cronbach Alpha formula to correlate the responses of 13 respondents that were part of the population but not part of the study sample. The reliability analysis yielded a reliability index of 0.087 which was considered sufficient for the study. (Four research questions and four hypotheses were formulated for the study). Mean was used to analyze the data for answering research questions while standard deviation and t-test was used to test the hypotheses of no significant difference at 0.05 level of significance. Findings showed that there was no significant difference between the mean responses of instructors and Students on the techniques of motivating Students' Psychomotor Skills Development in Electrical Installation and maintenance work trades. The study showed that the techniques identified in this study should be packaged and used to motivate electrical Installation and maintenance work Students' interest in school setting. It was also recommended that instructors of electrical Installation and maintenance work trades in Technical colleges should invite craftsmen where necessary to dispatch some certain skills and retrain instructors by

the government on the implementation of the Techniques such as strategies, use of appropriate methods, and adequate instructional materials in teaching and learning process. This reviewed literature is directly similar to the ongoing research with same topic, scope and location. One major differences, is that this current research is on motor vehicle mechanic works trade while the reviewed literature focused on Electrical Installation and maintenance work trade. However, in respect to Technical colleges in Niger State there will be a varying approach due to the current Insecurity challenges which has resulted to closing down of one of the schools while others at most at risk areas are not being effectively runned. Also method of data collection will carry since these researches are handled by different researchers

Summary of Related Literature

The review of literature related to this study disclosed that resources such as instructional facilities, appropriate instructional methods for effective teaching and learning process in MVM trade are very crucial since MVM trade subjects are practical oriented. The literature reviewed also disclosed that there is a greater need to upgrade teachers' skills and teachers themselves need to make deliberate effort to modify their instructional techniques in MVM trade so as to meet up with the challenges facing students in practical skills. Poor psychomotor skills performance that has been observed among students in technical colleges in Niger State prompted for this research findings to address and eliminate the poor performance of students' psychomotor skills that exist among the learners. It is disheartening for a child to spend three years learning a course which at the end of the day he cannot demonstrate any saleable idea gained during the training. The following are said to be reasons; inadequate application of teaching method by teachers, inadequate instructional facilities, inappropriate application of teaching techniques, poor safety practices for

effective skills acquisition, obsolete equipment and poor curriculum development used in TVET among others.

Also, reviewed literature disclosed that most MVM teachers are practically impaired as such they cannot guide students into effective practical lessons. Challenges highlighted above and many more prompted this research on techniques for motivating motor vehicle mechanic students, psychomotor skills development in Niger state technical colleges.

However, on the above reviewed literature, findings and discussion has being made to draw, improve, mind-map expected skills through the use of instructional resources, instructional methods, safety techniques during practical, and good maintenance culture, yet these are not obtainable in our technical colleges today. This prompted the burden for this research to bridge the gap left by literature review on techniques for motivating students' psychomotor skills development in other to devise mechanisms that will make the objectives of technical colleges establishment a reality.

CHAPTER THREE

3.0

METHODOLOGY

3.1 Research Design

A descriptive survey research design was used for the study. A descriptive research design involves the use of questionnaire to determine opinions of respondents on the issue under investigation. Descriptive survey research design gives a picture of a situation without manipulating any variable (Baba, 2009). Therefore, the survey design was considered suitable for the study.

3.2 Area of the Study

This study was carried out in Niger State of Nigeria. Niger State is located in the North-central geopolitical zone. It is made up of three senatorial zones and twenty five (25) Local Government Areas. The State has six government technical colleges and one federal science and technical college that are offering motor vehicle mechanic work trade. The colleges include Government Technical College Minna, Government Technical College Eyagi-Bida, Government Technical College Kontagora, Government Technical College New-Bussa, Government Technical College Pandogari, Suleiman Barau Technical College Suleja and Federal Science and Technical College Shiroro. However, one is selected out of each senatorial zone to represent the others making the overall total of three colleges which are choosen at

random. These include Government Technical College Minna, Government Technical College Kontagora, and Government Technical College, Eyagi-Bida.

3.3 Population of the Study

The targeted population for the study was 120 respondents consisting of 105 motor vehicle mechanic year III students, and 15 MVM teachers from three Technical Colleges in Niger State.

Table 1: Distribution of population in the study area

S/N	Technical Colleges	Teachers	Students
1	Government Technical College Minna	5	35
2	Government Technical College Kontagora	5	35
3	Government Technical College, Eyagi-Bida	5	35

Source: Niger State School Board

3.4 Sample

Since the total population is of manageable size, no sampling technique was used for the study. Hence, the entire population was used for the study.

3.5 Instrument for Data Collection

The instrument used for data collection was a structured questionnaire developed by the researcher for this study. It consists of three sections as follows; Section I: Contains nineteen items dealing with techniques for motivating motor vehicle mechanic students' psychomotor skills development in technical colleges in Niger State, Section II: Contains nineteen items dealing with challenges affecting motor

vehicle mechanic students' psychomotor skills development in technical colleges in Niger State, Section III: Contains nineteen items dealing with mechanisms for improving motor vehicle mechanic students' psychomotor skills development in technical colleges in Niger State?

3.6 Validation of the Instrument

The instrument validated by three lecturers from the Department of Industrial and Technology Education, Federal University of Technology, Minna. All suggestions and corrections were effected before the final print and administration to respondents.

3.7 Administration of the Instrument

The instrument for the study was administered to the respondents by the researcher through the help of one research assistant from each of the schools under study. The instruments were collected through research assistant by the researcher after appropriate completion by the respondents. A total of 120 questionnaires were collected (100% returns).

3.8 Method of Data Analysis

The data for this research study was analyzed using measures of central tendencies i.e, the mean, standard deviation while t-test statistics was used to test the null hypothesis at a .05 level of significance.

3.9 Decision Rule

In order to determine the acceptant level of each item, mean score of 2.50 was used as a cut-off point. Therefore any item with mean score of 2.50 and above were considered agreed, while those items with mean score of 2.49 and below where disagreed.

Therefore, if t-calculated the null hypotheses are not rejected but if t-calculated is greater than t-critical, the null hypotheses is rejected.

The responses are shown below;

Strongly Agree (SA) = 4

Agree (E) =3

Disagree (D) =2

Strongly Disagree (SD) = 1

CHAPTER FOUR

4.0 RESULTS AND DISCUSSIONS

4.1 Research Question 1:

What are the techniques for motivating motor vehicle mechanic students' psychomotor skills development in technical colleges in Niger State?

Table 1: **There is no significant difference between the mean responses of motor vehicle mechanic teachers and students on the techniques for motivating motor vehicle mechanic students' psychomotor skills development in technical colleges in Niger State.**

N_1=15; N_2= 105; SA: Strongly agreed; A: Agreed; D: Disagreed; SD: Strongly Disagreed

S/N	ITEMS	$\bar{X}_1$	$\bar{X}_2$	$\bar{X}_T$	REMARK
1	Reinforcing students' habits towards safety practices	3.73	3.64	3.69	Agreed
2	Teachers should demonstrate safety practices during instruction	3.87	3.58	3.73	Agreed
3	Implementation of self-centered learning	3.13	3.36	3.25	Agreed
4	Grouping of students during practical classes	3.73	3.35	3.54	Agreed
5	Employ three months industrial training (SIWES)	3.67	3.00	3.34	Agreed
6	Encourage students' participation on field trip/ excursion	3.46	3.23	3.35	Agreed
7	Selection of practical projects within the learner's ability	3.67	3.38	3.53	Agreed
8	Teachers should make the subject matter interesting	3.73	3.37	3.37	Agreed
9	Appropriate selection of tools and materials for a task should be guided by the teacher	3.20	3.33	3.27	Agreed
10	Ensure adequate safety facilities in the workshop	3.47	3.42	3.45	Agreed
11	Making learning flow from easy to hard	3.67	3.15	3.41	Agreed

12	Creating room for extra- curricular activities	3.20	2.93	3.07	Agreed
13	Assign students challenging but possible tasks	3.00	2.73	3.37	Agreed
14	Teachers should show keen interest in students' achievements and concern on students' failure	3.47	3.07	3.27	Agreed
15	During instruction, teachers should make their expectations clear	3.27	3.16	3.22	Agreed
16	Teachers should make learning fun	3.53	3.25	3.39	Agreed
17	Adequate supervision of student's work	3.13	3.25	3.19	Agreed
18	Practical work should be carried out when students are not stressed	3.73	3.13	3.43	Agreed
19	Use of augmentation reality devices	2.93	2.79	2.86	Agreed
20	Use of projectors to display practical work	2.73	3.26	2.99	Agreed

Key: $\bar{X}_1$ = Mean of Teachers; $\bar{X}_2$ = Mean of Students; $\bar{X}_T$ = Average of Mean of Teachers and Students, obtained by $\left(\frac{X_1+X_2}{2}\right)$; N_1 = Number of Teachers; N_2 = Number of Students.

The result presented in **table 1** above revealed that the respondents (Teachers and Students) strongly agreed with all the items and with mean score above 2.50, this implies that the respondent agree with all the items as techniques for motivating MVM students' psychomotor skills development in Technical Colleges in Niger State.

4.2 Research Question 2:

What are the challenges affecting motor vehicle mechanic students' psychomotor skills development in technical colleges in Niger State?

***Table 2*: There is no significant difference between the mean responses of motor vehicle mechanic teachers and students on the challenges affecting motor vehicle**

mechanic students' psychomotor skills development in technical colleges in Niger State.

N_1=15; N_2= 105; SA: Strongly agreed; A: Agreed; D: Disagreed; SD: Strongly Disagr

S/N	ITEMS	$\bar{X}_1$	$\bar{X}_2$	$\bar{X}_T$	REMARK
1	Lack of competent and skillful workshop attendants	2.93	2.79	2.86	Agreed
2	Too much of theoretical classes	3.00	2.88	2.94	Agreed
3	Employment of Instructional methods irrelevant to skill acquisition training	3.07	3.07	3.07	Agreed
4	Lack of teachers and workshop attendant collaboration in improving psychomotor skills among motor vehicle mechanic work	3.27	2.85	3.06	Agreed
5	Lack of conducive classrooms with furnishings	3.40	2.89	3.15	Agreed
6	Inadequate standard MVM workshop	3.07	3.16	3.12	Agreed
7	No provision of live vehicle for vehicle driving practical	3.20	2.93	3.07	Agreed
8	Inadequate consumable materials for practical training	3.20	3.24	3.22	Agreed
9	Limited practical hours	2.53	2.90	2.72	Agreed
10	Lack of functional hand tools for skill acquisition	2.87	2.90	2.89	Agreed
11	Lack of steady power supply during practical hours	3.07	2.79	2.93	Agreed
12	Lack of functional safety facilities in the workshop	3.00	2.86	2.93	Agreed
13	No general servicing and engine reconditioning equipment available	3.80	2.66	3.23	Agreed
14	Over population in the workshop during practical	3.20	2.72	2.96	Agreed
15	Poor research and innovation orientation	3.27	2.83	3.05	Agreed
16	Lack of adequate first aid box in MVM workshop	3.60	2.73	3.17	Agreed
17	Lack of proper orientation and necessary training in handling tools and equipment	3.47	2.73	3.10	Agreed
18	Inappropriate use of safety boots and overalls during practical	3.40	2.82	3.11	Agreed

Key: $\bar{X}_1$ = Mean of Teachers; $\bar{X}_2$ = Mean of Students; $\bar{X}_T$ = Average of Mean of Teachers and Students, obtained by $\left(\frac{\bar{X}_1+\bar{X}_2}{2}\right)$; N_1 = Number of Teachers; N_2 = Number of Students.

The result presented in **table 1** above revealed that the respondents (Teachers and Students) strongly agreed with all the items and with mean score above 2.50, this implies the respondent agree with all the items as the challenges affecting MVM students' psychomotor skills development in teaching and learning motor vehicle mechanic works in Technical Colleges in Niger State.

4.3 Research Question 3:

What are the mechanisms that can be adopted for improving motor vehicle mechanic students' psychomotor skills development in technical colleges in Niger State?

Table 3:**There is no significant difference between the mean responses of motor vehicle mechanic teachers and students on mechanisms for improving motor vehicle mechanic students' psychomotor skills development in technical colleges in Niger State.**

N_1=15 N_2= 105; SA: Strongly agreed; A: Agreed; D: Disagreed; SD: Strongly Disagreed

S/N	ITEMS	$\bar{X}_1$	$\bar{X}_2$	$\bar{X}_T$	REMARK
1	Strict observation of criteria should be taken for admission into motor vehicle mechanic trade in technical colleges base on interest and drive and pre- technical skills	3.67	3.43	3.55	Agreed

2	Technical college students should be considered for Industrial Trust Fund scheme	3.53	3.49	3.51	Agreed
3	Scholarship scheme should be adopted to nurture creativity and innovative skills among motor vehicle mechanic students	3.80	3.29	3.55	Agreed
4	Create an atmosphere of interaction between motor vehicle mechanic teachers and industries on current needs, discoveries and approaches on the technological developments	3.40	3.34	3.37	Agreed
5	Organizing an on-the-job training and seminars to keep to keep teachers' skills relevant and dynamic by the Government	3.53	3.42	3.48	Agreed
6	Avoid employing unqualified teachers	3.60	3.06	3.33	Agreed
7	Establishing mini factories in technical colleges for close supervision of the students and exposure to equipment and machineries as in factories	3.47	3.59	3.53	Agreed
8	Set ting standards and rewards for students upon training completion	3.20	3.06	3.13	Agreed
9	Motivating teachers through improving their standard of living and the motivation will naturally flow to their students	3.73	3.60	3.67	Agreed
10	Observing inter-school creativity and innovation competition programs between technical schools	3.47	3.28	3.38	Agreed
11	Employment of quality technical staff	3.60	3.42	3.51	Agreed
12	Provision of adequate safety facilities	3.53	3.52	3.53	Agreed
13	Provision of good ventilation in workshop	3.40	3.36	3.38	Agreed
14	Adequate supervision of students' work	3.60	3.23	3.42	Agreed
15	Encouraging group work among students	3.13	3.26	3.20	Agreed
16	Re-training/ Up-skilling for motor vehicle mechanic workshop attendants	3.60	3.63	3.62	Agreed

Key: $\bar{X}_1$ = Mean of Teachers; $\bar{X}_2$ = Mean of Students; $\bar{X}_T$ = Average of Mean of Teachers and Students, obtained by $\left(\frac{X_1+X_2}{2}\right)$; N_1 = Number of Teachers; N_2 = Number of Students.

The result presented in **table 1** above revealed that the respondents (Teachers and Students) strongly agreed with all the items and with mean score above 2.50, this implies that the respondents are in agreement with the suggested mechanisms for improving MVM students' psychomotor skills development in teaching and learning motor vehicle mechanic works in Technical Colleges in Niger State.

4.4 Hypothesis 1:

H0$_1$: There is no significant difference between the mean responses of motor vehicle mechanic teachers and students on the techniques for motivating motor vehicle mechanic students' psychomotor skills development in technical colleges in Niger State.

Table 4: Standard Deviation and t-test analysis of teachers and students on the techniques for motivating motor vehicle mechanic students' psychomotor skills development in technical colleges in Niger State.

N_1=15; N_2=105; S= Significant; NS= Not Significant

S/N	Items	$\bar{X}_1$	$\bar{X}_2$	$\bar{X}_T$	SD_1	SD_2	T-cal	Remark
1	Reinforcing students' habits towards safety practices	3.73	3.64	3.69	0.10	0.00	0.35	NS
2	Teachers should demonstrate safety practices during instruction	3.87	3.58	3.73	0.23	0.40	0.11	NS
3	Implementation of self-centered learning	3.13	3.36	3.25	0.00	0.00	0.32	NS
4	Grouping of students during practical classes	3.73	3.35	3.54	0.00	0.00	1.22	NS
5	Employ three months industrial training (SIWES)	3.67	3.00	3.34	0.33	0.17	0.23	NS
6	Encourage students' participation on field trip/ excursion	3.46	3.23	3.35	0.17	0.23	0.45	NS
7	Selection of practical projects within the learner's ability	3.67	3.38	3.53	0.00	0.00	0.32	NS

8	Teachers should make the subject matter interesting	3.73	3.37	3.37	0.00	0.00	0.23	NS
9	Appropriate selection of tools and materials for a task should be guided by the teacher	3.20	3.33	3.27	0.11	0.00	1.05	NS
10	Ensure adequate safety facilities in the workshop	3.47	3.42	3.45	0.00	0.00	0.33	NS
11	Making learning flow from easy to hard	3.67	3.15	3.41	0.23	0.00	1.22	NS
12	Creating room for extra-curricular activities	3.20	2.93	3.07	0.00	0.00	0.30	NS
13	Assign students challenging but possible tasks	3.00	2.73	3.37	0.23	0.15	0.22	NS
14	Making learning flow from easy to hard	3.47	3.07	3.27	0.23	0.11	0.45	NS
15	Creating room for extra-curricular activities	3.27	3.16	3.22	0.00	0.00	1.22	NS
16	Teachers should make learning fun	3.53	3.25	3.39	0.33	0.22	0.65	NS
17	Adequate supervision of student's work	3.13	3.25	3.19	0.33	0.00	0.44	NS
18	Practical work should be carried out when students are not stressed	3.73	3.13	3.43	0.00	0.00	0.35	NS
19	Use of augmentation reality devices	2.93	2.79	2.86	0.00	0.00	023	NS
20	Use of projectors to display practical work	2.73	3.26	2.99	0.11	0.00	1.23	NS

Key: **N_1=**Number of teachers; **N_2=**Number of students; **S=**Significant; **NS=**Not Significant

SD_1=Standard Deviation of teachers**;** **SD_2**=Standard Deviation of students;

Degree of Freedom (df) = $N_1 + N_2$-2=25, $T_{Critical} = \pm 1.76$

T-cal. = t- test value of the Instructors and students

The analysis in **table 4** shows that there is no significant difference in the mean response of teachers and students on the entire 20 items.

Therefore, we fail to reject the null hypothesis and conclude that deliberate efforts should be taken in other to effectively implement the techniques for motivating motor vehicle mechanic students' psychomotor skills development in motor vehicle mechanic trade in Technical Colleges in Niger State

4.5 Hypothesis 2:

$H0_2$: There is no significant difference between the mean responses of motor vehicle mechanic teachers and students on the challenges affecting motor vehicle mechanic students' psychomotor skills development in technical colleges in Niger State.

Table 5: Standard Deviation and t-test analysis of teachers and students on the challenges affecting motor vehicle mechanic students' psychomotor skills development in technical colleges in Niger State.

N_1=15; N_2=105; S= Significant;

NS= Not Significant

S/N	Items	$\bar{X}_1$	$\bar{X}_2$	$\bar{X}_T$	SD_1	SD_2	T-cal	Remark
1	Lack of competent and skillful workshop attendants	2.93	2.79	2.86	0.45	0.33	0.16	NS
2	Too much of theoretical classes	3.00	2.88	2.94	0.00	0.22	0.55	NS
3	Employment of Instructional methods irrelevant to skill acquisition training	3.07	3.07	3.07	0.00	0.00	1.50	NS
4	Lack of teachers and workshop attendants' collaboration in improving psychomotor skills among motor vehicle mechanic	3.27	3.85	3.06	0.22	0.00	1.33	NS

	work							
5	Lack of conducive classrooms with furnishings	3.40	2.89	3.15	0.00	0.33	0.11	NS
6	Inadequate standard MVM workshop	3.07	3.16	3.12	0.00	0.00	0.58	NS
7	No provision of live vehicle for vehicle driving practical	3.20	2.93	3.07	0.00	0.00	0.45	NS
8	Inadequate consumable materials for practical training	3.20	3.24	3.22	0.00	0.00	0.58	NS
9	Limited practical hours	2.53	2.90	2.72	0.10	0.00	0.17	NS
10	Lack of functional hand tools for skill acquisition	2.87	2.90	2.89	0.00	0.00	0.27	NS
11	Lack of steady power supply during practical hours	3.07	2.79	2.93	0.00	0.13	1.65	NS
12	Lack of functional safety facilities in the workshop	3.00	2.86	2.93	0.33	0.42	0.27	NS
13	No general servicing and engine reconditioning equipment's available	3.80	2.66	3.23	0.00	0.00	0.45	NS
14	Over population in the workshop during practical	3.20	2.72	2.96	0.00	0.00	1.86	NS
15	Poor research and innovation orientation	3.27	2.83	3.05	0.11	0.32	0.33	NS
16	Lack of adequate first aid box in MVM workshop	3.60	2.73	3.17	0.00	0.00	1.55	NS
17	Lack of proper orientation and necessary training in handling tools and equipment	3.47	2.73	3.10	0.00	0.00	0.11	NS
18	Inappropriate use of safety boots and overalls during practical	3.40	2.82	3.11	0.32	0.48	0.00	NS

Key: N_1=Number of teachers; N_2=Number of students; **S**=Significant; **NS**=Not Significant

SD_1=Standard Deviation of teachers**;** SD_2=Standard Deviation of students;

Degree of Freedom (df) = $N_1 + N_2$-2=25, $T_{Critical} = \pm 1.76$

t-cal. = t- test value of the Instructors and students

The analysis in **table 5** shows that there is no significant difference in the mean response of teachers and students on the entire 18 items.

Therefore, we fail to reject the null hypothesis and conclude collaboration effort should be made between the state government, Technical curriculum planners, Automobile teachers and the students to overcome the current challenges affecting motor vehicle mechanic students' psychomotor skills development in motor vehicle mechanic trade in Technical Colleges in Niger State.

4.6 Hypothesis 3:

H0$_3$: There is no significant difference between the mean responses of motor vehicle mechanic teachers and students on mechanisms for improving motor vehicle mechanic students' psychomotor skills development in technical colleges in Niger State.

Table 6: Standard Deviation and t-test analysis of teachers and students on the challenges affecting motor vehicle mechanic students' psychomotor skills development in technical colleges in Niger State.

N_1=15; N_2=105; S= Significant;

NS= Not Significant

S/N	Items	$\bar{X}_1$	$\bar{X}_2$	$\bar{X}_T$	SD_1	SD_2	T-cal	Remark
1	Strict observation of criteria should be taken for admission into motor vehicle mechanic trade in technical colleges base on interest and drive and pre- technical skills	3.67	3.43	3.55	0.50	0.53	-0.11	NS
2	Technical college students should be considered for Industrial Trust Fund scheme	3.53	3.49	3.51	0.50	0.48	0.39	NS
3	Scholarship schemes should be adopted to nurture creativity and innovative	3.80	3.29	3.55	0.44	0.40	0.00	NS

	skills among motor vehicle mechanic students							
4	Create an atmosphere of interaction between motor vehicle mechanic teachers and industries on current needs, discoveries and approaches on the technological developments	3.40	3.34	3.37	0.00	0.00	0.11	NS
5	Organizing on-the-job training and seminars to keep to keep teachers' skills relevant and dynamic by the Government	3.53	3.42	3.48	0.33	0.33	0.000	NS
6	Avoid employing unqualified teachers	3.60	3.06	3.33	0.50	0.23	0.13	NS
7	Establishing mini factories in technical colleges for close supervision of the students and exposure to equipment and machineries as in factories	3.47	3.59	3.53	0.00	0.00	0.13	NS
8	Setting standards and rewards for students upon training completion	3.20	3.06	3.13	0.00	0.00	0.89	NS
9	Motivating teachers through improving their standard of living and the motivation will naturally flow to their students	3.73	3.60	3.67	0.00	0.23	0.39	NS
10	Observing inter-school creativity and innovation competition programs between technical schools	3.47	3.28	3.38	033	0.00	1.63	NS
11	Employment of quality technical staff	3.60	3.42	3.51	0.00	0.05	0.77	NS
12	Provision of adequate safety facilities	3.53	3.52	3.53	0.00	0.33	0.00	NS
13	Provision of good ventilation in workshop	3.40	3.36	3.38	0.33	0.15	0.22	NS
14	Adequate supervision of students' work	3.60	3.23	3.42	0.00	0.00	0.27	NS
15	Encouraging group work among students	3.13	3.26	3.20	0.45	0.00	0.90	NS
16	Re-training/ Up-skilling for motor vehicle mechanic workshop attendants	3.60	3.63	3.62	0.22	0.00	0.34	NS

Key: N_1=Number of teachers; N_2=Number of students; **S**=Significant; **NS**=Not Significant

SD_1=Standard Deviation of teachers**;** SD_2=Standard Deviation of students;

Degree of Freedom (df) $= N_1 + N_2 - 2 = 25$, $T_{Critical} = \pm 1.76$

t-cal. = t- test value of the Instructors and students

The analysis in **table 6** shows that there is no significant difference in the mean response of teachers and students on the entire 18 items.

Therefore, we fail to reject the null hypothesis and conclude collaboration effort should be made between the state government, Technical curriculum planners, Automobile teachers and the students to adopt the mechanisms that will improve motor vehicle mechanic students' psychomotor skills development in motor vehicle mechanic trade in Technical Colleges in Niger State.

Major Findings of the Study

The following are the findings of the study presented based on the research questions and the hypotheses highlighted for the study.

Findings, that relates to techniques for motivating motor vehicle mechanic students' psychomotor skills development in technical colleges in Niger State.

The findings shows that below are the techniques for motivating motor vehicle mechanic students' psychomotor skills development in motor vehicle mechanic trade in Technical Colleges in Niger State:

- Reinforcing students' habits towards safety practices
- Teachers should demonstrate safety practices during instruction
- Grouping of students during practical classes
- Encourage students' participation on field trip/ excursion

- Selection of practical projects within the learner's ability
- Appropriate selection of tools and materials for a task should be guided by the teacher
- Practical work should be carried out when students are not stressed

The findings in hypothesis disclosed that we accept the null hypothesis and conclude that deliberate efforts should be taken in other to effectively implement the techniques for motivating motor vehicle mechanic students' psychomotor skills development in motor vehicle mechanic trade in Technical Colleges in Niger State.

Findings related to challenges affecting motor vehicle mechanic students' psychomotor skills development in motor vehicle mechanic trade in Technical Colleges in Niger State.

The findings show that the following are the challenges affecting motor vehicle mechanic students' psychomotor skills development in motor vehicle mechanic trade in Technical Colleges in Niger State:

- Lack of competent and skillful workshop attendants
- Lack of teachers and workshop attendants' collaboration in improving psychomotor skills among motor vehicle mechanic work
- Inadequate standard MVM workshop
- No provision of live vehicle for vehicle driving practical
- Over population in the workshop during practical

The findings in hypothesis disclosed that we accept the null hypothesis and conclude that collaboration effort should be made between the state government, Technical curriculum planners, Automobile teachers and the students to overcome the current challenges affecting motor vehicle mechanic students' psychomotor

skills development in motor vehicle mechanic trade in Technical Colleges in Niger State.

Findings related to mechanisms for improving motor vehicle mechanic students' psychomotor skills development in Technical Colleges in Niger State

The findings shows the following are the mechanisms that need to be adopted to improve motor vehicle mechanic students' psychomotor skills development in motor vehicle mechanic trade:

- Strict observation of criteria should be taken for admission into motor vehicle mechanic trade in technical colleges base on interest and drive and pre-technical skills
- Technical college students should be considered for Industrial Trust Fund scheme
- Scholarship schemes should be adopted to nurture creativity and innovative skills among motor vehicle mechanic students
- Create an atmosphere of interaction between motor vehicle mechanic teachers and industries on current needs, discoveries and approaches on the technological developments
- Establishing mini factories in technical colleges for close supervision of the students and exposure to equipment and machineries as in factories
- Re-training/ Up-skilling for motor vehicle mechanic workshop attendants
- Motivating teachers through improving their standard of living and the motivation will naturally flow to their students

The findings in hypothesis disclosed that we accept the null hypothesis and conclude that collaboration effort should be made between the state government, Technical education curriculum planners, Automobile teachers and the students to adopt mechanisms that will improve motor vehicle mechanic students' psychomotor skills development in motor vehicle mechanic trade in Technical Colleges in Niger State.

Discussion of Findings

The discussion of findings based on the research questions and statement of hypotheses of the study.

The findings on the techniques for motivating motor vehicle mechanic students' psychomotor skills development in the course if the training students in motor vehicle mechanic trade, revealed that the respondents (Teachers and Students) agreed with all the items and with mean score above 2.50, this implies that techniques for motivating MVM students, psychomotor skills development are very relevant and needs to be implemented effectively in teaching and learning motor vehicle mechanic works in Technical Colleges in Niger State. The findings shows that below are the techniques for motivating motor vehicle mechanic students, psychomotor skills development in motor vehicle mechanic trade in Technical Colleges in Niger State: Reinforcing students' habits towards safety practices, Teachers should demonstrate safety practices during instruction, Grouping of students during practical classes, Encourage students' participation on field trip/ excursion,, Selection of practical projects within the learner's ability, Appropriate selection of tools and materials for a task should be guided by the teacher, Practical work should be carried out when students are not stressed. The testing of hypothesis disclosed that we accept the null hypothesis and conclude that deliberate efforts should be taken in other to effectively implement the

techniques for motivating motor vehicle mechanic students' psychomotor skills development in motor vehicle mechanic trade in Technical Colleges in Niger State. This is in agreement with Saba, (2010) that during the process of psychomotor acquisition students should be motivated, as motivation acts as initial activator and sustainer of desired intention necessary to trigger the action in acquiring skills. As interest promote learning the interest of

the students must be arose to that degree. This can be achieved if the institutions make available needed facilities for student's used, the school arena must be suitable for learning, and also appropriate techniques should be used in course delivery for adequate transfer of knowledge and effective maintenance of equipment and facilities in workshops/laboratories.

The findings on the challenges affecting motor vehicle mechanic students' psychomotor skill development in MVMW trade revealed that the respondents (Teachers and Students) agreed with all the items and with mean score above 2.50, this implies the challenges described in the research question are valid/current challenges affecting MVM students' psychomotor skills development in teaching and learning motor vehicle mechanic works in Technical Colleges in Niger State.

The findings show that the following are the challenges affecting motor vehicle mechanic students' psychomotor skills development in motor vehicle mechanic trade in Technical Colleges in Niger State: Lack of competent and skillful workshop attendants, Lack of teachers and workshop attendants' collaboration in improving psychomotor skills among motor vehicle mechanic work, Inadequate standard MVM workshop, No provision of live vehicle for vehicle driving practical, Over population in the workshop during practical

The testing of the hypothesis revealed that we accept the null hypothesis and conclude that collaboration effort should be made between the state government, Technical curriculum planners, Automobile teachers and the students to overcome the current challenges affecting motor vehicle mechanic students' psychomotor skills development in motor vehicle mechanic trade in Technical Colleges in Niger State. The findings support previous studies for instance, Nyapson (2015) who pointed out that TVET require quality and committed manpower to achieve the set goals of the programme in all technical and vocational institutions across Nigeria.. Olabiyi (2009) explained that practice is the major factor in the development of psychomotor skills. Olabiyi said that psychomotor skill is the major part of what TVET wishes the students to develop. Psychomotor skill according to Olabiyi requires the actual muscular movements of fingers, hands, arms and other parts of the body, coordinated with eye and sometimes the ear; such movements are involved in the use of tools, instruments and machines.

The findings on mechanisms for improving motor vehicle mechanic students' psychomotor skills development in MVMW trade revealed that the respondents (Teachers and Students) strongly agreed with all the items and with mean score above 2.50, this implies that they are in strong agreement with the suggested mechanisms for improving MVM students' psychomotor skills development in teaching and learning motor vehicle mechanic works in Technical Colleges in Niger State.

The findings shows the following are the mechanisms that need to be adopted to improve motor vehicle mechanic students' psychomotor skills development in motor vehicle mechanic trade: Strict observation of criteria should be taken for admission into motor vehicle mechanic trade in technical colleges base on interest and drive and pre- technical skills, Technical college students should be considered for Industrial

Trust Fund scheme, Scholarship schemes should be adopted to nurture creativity and innovative skills among motor vehicle mechanic students, Create an atmosphere of interaction between motor vehicle mechanic teachers and industries on current needs, discoveries and approaches on the technological developments, Establishing mini factories in technical colleges for close supervision of the students and exposure to equipment and machineries as in factories, Re-training/ Up-skilling for motor vehicle mechanic workshop attendants, Motivating teachers through improving their standard of living and the motivation will naturally flow to their students. The testing of the hypothesis revealed that we accept the null hypothesis and conclude that collaboration effort should be made between the state government, Technical education curriculum planners, Automobile teachers and the students to adopt mechanisms that will improve motor vehicle mechanic students' psychomotor skills development in motor vehicle mechanic trade in Technical Colleges in Niger State. The finding is in total agreement with some notable scholars in industrial, Technical and Vocational Education and Training (TVET), the scholars include Olaitan (2009), Anaele (2001)who stressed in Olaitan, (2021) that functional skills (psychomotor) in any technical and vocational trade can only be attained when the manpower, tools, materials, facilities and methodology are effectively coordinated and mobilized into relevant actions such coordination and actions that can led to effective implementation of the modular building trades curriculum.

CHAPTER FIVE

5.0 Summary, Conclusion and Recommendations

5.1 Summary of the Study

The FGN (2014) stated that technical and vocational education shall be self-reliant economically. Contributing, Ombugus (2015) asserted that technical education philosophy was built on the production of graduates who will be equipped with necessary skills and knowledge that will not only enable them fit into already existing job opportunity in the society, but will also empower them with skills that will enable them establish on their own and create job opportunity for others. We can see from above stated objectives that our country has technological skills development plans yet these plans are not realized. Skill training in technical education and particularly in motor vehicle mechanic works trade should emphasize psychomotor skill development over cognitive and affective skills. Nyemachi and Ekong (2009) observed that the present state of technical education has not been promising and from our study, reasons can be traced to the fact that all human and material resources required for the successful execution of this education are not given adequate attention by government and policy makers. As part of policy planning, the limited resources allocated to run the automobile technology workshop should be used with

all types of techniques and ideals following the determined process to achieve the general goals of technical education.

This study therefore, was conducted to determine techniques for motivating motor mechanic students' Psychomotor skills development in motor vehicle mechanic works trade in Technical Colleges in Niger State. Review of correlated literature disclose the techniques for motivating students' Psychomotor skills development, challenges affecting Students' Psychomotor skills development and mechanisms that need to be adopted to improve Students' Psychomotor skills development in motor vehicle mechanic trade in Technical Colleges in Niger State. This research instrument was developed through a survey research approach for the study, and validated by three lecturers in the department of Industrial and Technology Education. The respondents selected as the population for the study were Motor Vehicle mechanic Teachers and Students of three technical colleges in Niger State. However, with the permission of principals of the colleges under study and help of MVM teacher in each of the colleges, questionnaires were administered. Tables were used in a tabular form which presented the data.

The data related to research question and hypothesis were analyzed namely;

1. All items from table A(section A) were accepted as provisions of techniques for motivating motor vehicle mechanic students' psychomotor skills development in teaching and learning of motor vehicles mechanic works in Technical Colleges in Niger State.

2. All items on table B (section B) were all agreed which was presented as challenges affecting Psychomotor skills development in teaching and learning motor vehicle mechanic works trade in Technical Colleges in Niger State.

3. All the items on table (section C) were strongly agreed as mechanisms for improving students' psychomotor skills development in teaching and learning process in motor vehicle mechanic works trade in Technical Colleges in Niger State.

5.2 Implications of the Study

The findings of the study has much implication on the teachers and students of motor vehicle mechanic works trade in technical colleges. They include;

1. The findings regarding techniques for motivating students' Psychomotor skills development of motor vehicle mechanic students showed that reinforcing student's habits towards safety practices, teachers should demonstrate safety practices, implementation of self-centered learning, grouping of Students during practical classes, employ three months Industrial training, encourage Students' participation in field trip, selection of Practical project within the learner's ability, teachers should make the subject matter interesting, appropriate selection of tools and materials should be guided by the teacher, ensure adequate safety facilities in the workshop, making learning flow from easy to hard, creating room for extra-curricular activities, teachers should show keen interest in student's achievement and concern on students' failure, giving clear instructions by teachers, adequate supervision of students' work and practical should be carried out when students are not tired. The educational implication of this study is that if these provisions are lacking, in these colleges, students will loose interest in learning because these are accepted as techniques that will motivate students towards learning as such the aim of MVM trade training will be defeated because poor or no learning will take place. Also, graduates will end up being reliabilities.

2. Another findings of this study with regard to challenges affecting students' psycomotor skill development in motor vehicle mechanic works trade showed that

lack of competent and skillful workshop attendants, too much theoretical classes, employment of Instructional methods irrelevant to skill acquisition training, lack of teachers and Workshop attendants collaboration in improving psychomotor skill among MVM students, lack of conducive classrooms with furnishings, inadequate MVM workshop, no provision of live vehicle for driving practical, lack of consumable materials for practical, limited practical hours, lack of functional hand tools, no general servicing and engine reconditioning equipment's available, over population in the workshop during practical, poor research and innovation orientation, inadequate first aid box, inadequate orientation on techniques for handling tools and equipment. The implication of the findings is that as long as these issues are not confronted with deliberate efforts. Motor vehicle mechanic works trade will never make impact on our national growth and development. In fact the entire system will turn a liability to the government and it will increase the rate of terrorism in our state because of high rate of unemployment and lack of self reliant skills among young people.

3. The findings of the study with regard to mechanisms for improving students psychomotor skills development in teaching and learning MVMW trade showed that Strict observation of criteria should be taken for admission into motor vehicle mechanic trade in technical colleges base on interest and drive and pre- technical skills, Technical college students should be considered for Industrial Trust Fund scheme, Scholarship schemes should be adopted to nurture creativity and innovative skills among motor vehicle mechanic students, Create an atmosphere of interaction between motor vehicle mechanic teachers and industries on current needs, discoveries and approaches on the technological developments, Organizing on-the-job training and seminars to keep to keep teachers' skills relevant and dynamic by the

Government, Avoid employing unqualified teachers, Establishing mini factories in technical colleges for close supervision of the students and exposure to equipment and machineries as in factories, Setting standards and rewards for students upon training completion, Motivating teachers through improving their standard of living and the motivation will naturally flow to their students, Observing inter-school creativity and innovation competition programs between technical schools, Re-training/ Up-skilling for motor vehicle mechanic workshop attendants. The implication of the findings is that there must be continuous researches and innovations in other to keep up with the pace in the world of technology in respect to better ways of approaching and handling trending issues in motor vehicle mechanic works trade. It also implies that the system will remain effective and efficient in delivering to expectations and also able to compete with other developing countries.

5.3 Contributions to Knowledge

The findings of this study will contribute a lot by providing information to MVMW trade teachers on the techniques to adapt in motivating their students' interest towards psychomotor skills development needed by their learners. The findings will also encourage collaboration effort between the state government, Technical curriculum planners, Automobile teachers and the students to overcome the current challenges affecting motor vehicle mechanic students' psychomotor skills development in motor vehicle mechanic trade in Technical Colleges in Niger State. The findings will also encourage collaboration effort to adopt the mechanisms that will improve motor vehicle mechanic students' psychomotor skills development in motor vehicle mechanic trade in Technical Colleges in Niger State.

5.4 Conclusion

To effectively motivate motor vehicle mechanic students towards learning , deliberate efforts must be made to implement all motivational techniques possible towards students' psychomotor skills development, and adopt mechanisms disclosed in this study to improve learners' psychomotor skill development thereby, curbing the current challenges affecting MVM students in Technical Colleges In Niger State. This will give rise to the production of graduates who will be equipped with necessary skills and knowledge that will not only enable them fit into already existing job opportunity in the society, but will also empower them with skills that will enable them establish on their own and create job opportunity for others.

5.5 Recommendation

Based on the findings and conclusions made, the following recommendations are hereby suggested after questionnaire has been administered and calculated, the following were recommended.

1. Recruitment of competent and skillful workshop attendants.
2. Motor Vehicle Mechanic teachers and workshop attendant's collaboration in improving student practical skills acquisition.
3. Live vehicle should be made available for driving training and students should be trained vehicle driving and be giving driving license at end of training.
4. Teachers should be motivated first through improving their standard of living and the motivation will naturally transfer to the learners through motivated instructors.
5. An on- the- job training and seminars to keep teachers skill relevant and dynamic should be planned by the government.

5.6 Suggestions for Further Research Studies

The following suggestions are made for further research studies;

1. The effect of motivating MVM student psychomotor skill development on creative and innovation skill.
2. Investigation on the effective supervision strategies in Motor vehicle Mechanic trade for effective curriculum implementation.

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APPENDIX I

REQUEST LETTER TO VALIDATORS

Industrial and Technology Education Department
School of Science and Technology Education,
Federal University of Technology,
P.M.B. 65,
Minna,
3rd February, 2023.

Dear Sir,

REQUEST FOR FACE VALIDATION OF INSTRUMENT ON TECHNIQUES FOR MOTIVATING MOTOR VEHICLE MECHANIC (MVMW) STUDENTS' PSYCHOMOTOR SKILLS DEVELOPMENT IN TECHNICAL COLLEGES IN NIGER STATE

I am an undergraduate student of the above named address currently undertaking a study on the topic: TECHNIQUES FOR MOTIVATING MOTOR VEHICLE MECHANIC (MVMW) STUDENTS' PSYCHOMOTOR SKILLS DEVELOPMENT IN TECHNICAL COLLEGES IN NIGER STATE

Attached is the draft copy of the instrument. As an expert in this area, your assistance is hereby solicited to enable me accomplish this task. Kindly go through the item to verify their clarity, relevance and appropriateness in the use of language. In addition to this you can also make further suggestions that will improve the status and quality of the instrument. Your contribution to this work is highly appreciated.

Thanks

Yours faithfully,

YUSUF FREDRICK

2018/3/74375TI

APPENDIX II
FEDERAL UNIVERSITY OF TECHNOLOGY, MINNA.
SCHOOL OF SCIENCE AND TECHNOLOGY EDUCATION.
DEPARTMENT OF INDUSTRIAL AND TECHNOLOGY EDUCATION.

QUESTIONNAIRE ON TECHNIQUES FOR MOTIVATING MOTOR VEHICLE MECHANIC (MVMW) STUDENTS' PSYCHOMOTOR SKILLS DEVELOPMENT IN TECHNICAL COLLEGES IN NIGER STATE.

PART ONE (1)

Introduction: the main objective of this material is to source for information on Techniques for Motivating Motor Vehicle Mechanic Students' Psychomotor Skills Development in Technical Colleges in Niger State. Kindly respond to the questionnaire sincerely by ticking (√) on the appropriate column that represents your view on the topic above. All information collected from this research will be treated confidentially and will be used for the research purpose only.

STATUS OF RESPONDENT

Teacher ☐

Student ☐

Name of Technical College_____

A guide on how to tick(√) questionnaire is shown below. The following rating scale is to be used in indicating your view by ticking the phrase that best portray your level of agreement to the items. The questionnaire items can be rated as follows, using the following scale to indicate your thought.

Strongly Agree. (SA) = 4 points
Agree. (A) =3 points
Disagreed (D) =2 points
Strongly disagreed (SD) 1 point

Note: Please do not tick (√) more than one option in a single question

SECTION "A"

What are the techniques for motivating motor vehicle mechanic students' psychomotor skills development in technical colleges in Niger State?

S/N	ITEMS	SA	A	D	SD
1	Reinforcing students' habits towards safety practices				
2	Teachers should demonstrate safety practices during				

	instruction				
3	Implementation of self-centered learning				
4	Grouping of students during practical classes				
5	Employ three months industrial training (SIWES)				
6	Encourage students' participation on field trip/ excursion				
7	Selection of practical projects within the learner's ability				
8	Teachers should make the subject matter interesting				
9	Appropriate selection of tools and materials for a task should be guided by the teacher				
10	Ensure adequate safety facilities in the workshop				
11	Making learning flow from easy to hard				
12	Creating room for extra- curricular activities				
13	Assign students challenging but possible tasks				
14	Teachers should show keen interest in students' achievements and concern on students' failure				
15	During instruction, teachers should make their expectations clear				
16	Teachers should make learning fun				
17	Adequate supervision of student's work				
18	Practical work should be carried out when students are not stressed				
19	Use of augmentation reality devices				
20	Use of projectors to display practical work				

SECTION "B"

What are the challenges affecting motor vehicle mechanic students' psychomotor skills development in technical colleges in Niger State?

S/N	ITEMS	SA	A	D	SD
1	Lack of competent and skillful workshop attendants				
2	Too much of theoretical classes				
3	Employment of Instructional methods irrelevant to skill acquisition training				
4	Lack of teachers and workshop attendants' collaboration in improving psychomotor skills among motor vehicle mechanic work				
5	Lack of conducive classrooms with furnishings				
6	Inadequate standard MVM workshop				
7	No provision of live vehicle for vehicle driving practical				
8	Inadequate consumable materials for practical training				
9	Limited practical hours				
10	Lack of functional hand tools for skill acquisition				
11	Lack of steady power supply during practical hours				
12	Lack of functional safety facilities in the workshop				
13	No general servicing and engine reconditioning equipments available				
14	Over population in the workshop during practical				
15	Poor research and innovation orientation				
16	Lack of adequate first aid box in MVM workshop				
17	Lack of proper orientation and necessary training in handling tools and equipment				
18	Inappropriate use of safety boots and overalls during practical				

SECTION "C"

What are the mechanisms that can be adopted for improving motor vehicle mechanic students' psychomotor skills development in technical colleges in Niger State?

S/N	ITEMS	SA	A	D	SD
1	Strict observation of criteria should be taken for admission into motor vehicle mechanic trade in technical colleges base on interest and drive and pre-technical skills				
2	Technical college students should be considered for Industrial Trust Fund scheme				
3	Scholarship schemes should be adopted to nurture creativity and innovative skills among motor vehicle mechanic students				
4	Create an atmosphere of interaction between motor vehicle mechanic teachers and industries on current needs, discoveries and approaches on the technological developments				
5	Organizing an on-the-job training and seminars to keep to keep teachers' skills relevant and dynamic by the Government				
6	Avoid employing unqualified teachers				
7	Establishing mini factories in technical colleges for close supervision of the students and exposure to equipment and machineries as in factories				
8	Set ting standards and rewards for students upon training completion				
9	Motivating teachers through improving their standard of living and the motivation will naturally flow to their students				
10	Observing inter-school creativity and innovation competition programs between technical schools				
11	Employment of quality technical staff				
12	Provision of adequate safety facilities				
13	Provision of good ventilation in workshop				
14	Adequate supervision of students' work				
15	Encouraging group work among students				
16	Re-training/ Up-skilling for motor vehicle mechanic workshop attendants				

APPENDIX III

S/N	Technical Colleges	Teachers	Students
1	Government Technical College Minna	5	35
2	Government Technical College Kontagora	5	35
3	Government Technical College, Eyagi-Bida	5	35