

**ASSESSMENT OF ELECTRICAL/ELECTRONICS WORKSHOP  
MANAGEMENT PRACTICES IN FEDERAL UNIVERSITY OF TECHNOLOGY  
MINNA NIGER STATE.**

**BY**

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**2014/1/52220TI**

**DEPARTMENT OF INDUSTRIAL AND TECHNOLOGY EDUCATION,  
FEDERAL UNIVERSITY OF TECHNOLOGY, MINNA, NIGER STATE.**

**JUNE, 2021**

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**A RESEARCH PROJECT SUBMITTED TO THE DEPARTMENT OF INDUSTRIAL  
AND TECHNOLOGY EDUCATION**

**SCHOOL OF SCIENCE AND TECHNOLOGY EDUCATION,  
FEDERAL UNIVERSITY OF TECHNOLOGY, MINNA, NIGER STATE**

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BACHELOR OF TECHNOLOGY (B. TECH) DEGREE IN INDUSTRIAL AND  
TECHNOLOGY EDUCATION.**

**JUNE, 2019**

## **DECLARATION**

I ENIMADE, Olumide Ore-Ofe with matriculation number 2014/1/52220TI, 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.

ENIMADE, Olumide Ore-Ofe

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2014/1/52220TI

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Sign and Date

## CERTIFICATION

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

Dr. Raymond Emmanuel  
Project Supervisor

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Sign and Date

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Head of Department

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Sign and Date

External Examiner

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Sign and Date

## **DEDICATION**

This project is dedicated to Almighty.

## **ACKNOWLEDGEMENTS**

My in-depth and sincere appreciation goes to the giver and sustainer of life, the Almighty GOD for his divine protection over my life for continually seeing me through this programme. My Gratitude goes to my supervisor Dr. Raymond Emmanuel, Dr. T.M Saba, prof Robert O. Okwori, Dr. Hon. G.A Usman and my project coordinator, Dr. A.M Hassan, for their recommendation and follow up and attention in every possible way. Adding to the collection of ideas bring out the best in me, never relent checking and making the proper and appropriate correction towards the success of my work and making the project a great success, in an immeasurable thanks, Sir, I appreciate. I sincerely thank my parent who through the years has been supportive morally and above spiritually. My sincere appreciation and special thanks goes to Mrs Ajoke Enimade Adesunkanmi kind and my supportive sister. Am also using this opportunity to say a big thanks to my friends and entire course mate for exchange of idea and help rendered, and those numerous sleepless night in class

## ABSTRACT

*This study examined the Electrical/Electronic workshop management practices in Federal University of Technology Minna Niger State. Four research questions were developed to guide the study and two null hypotheses were tested at 0.05 level of significance. It employed a descriptive survey research design. . A structured questionnaire developed by the researcher and validated by 3 expert from Industrial and Technology Education Department Federal University of Technology minna was used for data collection for the study. Mean, standard deviation was used to analyse the research questions while T-test was used to test the hypotheses. The study used a four-point scale questionnaire, which contains a total of 39-items, as instrument. In all, 30 lecturers and 4 workshop technologist made up the sample for the study, giving rise to a total sample size of 34. The result showed Provision of adequate funds for the purchase of consumable materials such as cables and maintenance of existing facilities constant checking of tools and materials to avoid loss due to pilfering or vandalism, Lecturers and workshop technologist in evaluating workshop instruction should find the tools and equipment that were particularly difficult to operate or did not function in making the project, Improving the security arrangement in the workshop by checking pilfering of tools by both staff and students, Constant checking of tools and materials to avoid loss due to pilfering or vandalism. The study recommended among other things, that all the techniques identified in the study should be packaged to train students, workshop technologist and lecturers through workshop or seminars, Workshop in institutions should be equipped with relevant modern machines and tools for the training of students.*

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## **CHAPTER ONE**

### **INTRODUCTION**

#### **1.1 Background to the Study**

Skill oriented programmes requires the use of workshop for the provision of learning activities in which the learner could experiment, study, create, construct, design, and repair any equipment.

The school workshop refers to a room or building housing the facilities used for manual training of students so that they could acquire the practical skills that would enhance their economic life.

In order to carry out such skilled training, the school workshop must be well managed in order to be a replica of what is obtainable in industries and companies where the students will find employment upon graduation. In the same vein workshop refers to a room or building where tools and machines are used for making or repairing things (Owoeye & Yara, 2011). Similarly, workshop is a unique learning environment in which the learner may test, construct, repair, experiment, design, disassemble, create, imagine and study (Babayo & Abdul, 2017).

Management is the process of dealing with or controlling things or people. Eze (2013) defined management as the act of getting people together to accomplish desire goals and objectives using available resources (human, material and financial) efficiently and effectively. Management encompasses planning, organizing, leading, directing and controlling an organization or efforts for the purpose of accomplishing a set goal. Workshop management techniques include: planning techniques organizing techniques, coordinating techniques for workshop instruction, techniques for implementing workshop instruction and evaluating techniques for workshop instruction.

Workshop management techniques are various ways or methods adopted by lecturers and technologist in schools and companies on how students can acquire practical skills. In the same vein, Kata (2010) stated that workshop management techniques are strong means to attain

competence in a job or occupation by the concerned individuals. He added that techniques are important ways which when appropriately adopted results into effective teaching and learning of practical subjects. According to Agu (2016), techniques are ways or mode of doing things such as:

Planning techniques for workshop instruction. Nwachukwu (2011) noted that for any effective instruction in the workshop, appropriate instructional techniques must be arranged, utilized and kept in order so that an acceptable occupational work habit and operational procedure are successfully imparted. Good planning gives impetus to effective learning and for planning to be effective, planning techniques must be considered Eze (2013). In effective planning there must be selection of appropriate materials, tools and equipment, identification of practical lesson objectives, selection of practical projects within the ability of students, drawing up step by step the procedure of carrying out the task, ensuring that all safety devices to be used for the lesson are in place and more so, preparation of learning sequence, that is, starting from simple to complex steps.

Organizing techniques for workshop instruction: organization in the workshop entails the arrangement of tools and equipment in the order they should be utilized in the step to step delivery of instruction. Okoro (2012) noted that in making the choice of what to teach, when to teach and how to teach in workshop, lecturers, technologist and technical teachers should be guided by the identified organizing techniques to solve such crucial issues. These techniques include, equipment and tools be organized in sequence like uses, sizes and colours for easy reference and accountability, tools be arranged so that supervisors can inspect and immediately identify worn out, broken and lost ones, lost or damaged tools be replaced for continuity of the

programme, delegating functions to those involved in the workshop lessons, inviting master craftsman as the need arises to demonstrate certain skills in the classroom etc.

Coordinating technique for workshop instruction; according to Mbaga (2018), coordinating is the bringing together of related activities in school workshop to ensure a frictionless flow of work. Wale (2014) looked at coordinating process in terms of workshop management process ensuring that workshop programme activities are being brought together, harmonized and unified for effectiveness of workshop instruction. Akpakwu (2018) in his contribution said that coordinating is the synchronization of safety of students and material resources to achieve effective workshop instruction.

Techniques for implementing workshop instruction: For effective implementation of workshop instruction techniques, the following procedures should be adopted; hazardous substances subjected under control, taking decision on suitable time for workshop lessons, sharing of specific roles to students with major school events, trying out the work before the actual execution, grouping of students based on workshop availability, waste must be minimized.

Evaluation technique for workshop instruction: Nwachukwu (2011) looked at evaluation in an educational setting as the processes of determining how much learning the students have acquired. In general terms, it is the process of reaching decisions. Patizhiko (2013) definition of evaluation pertaining to workshop instruction considers it as the process of assessing the effectiveness of workshop lessons in relation to its objectives using appropriate measuring techniques and providing feedback.

Workshop management techniques keep the workshop materials, machines and tools in good working conditions if properly applied by the teachers. Workshop management is successful if the objective for managing the workshop is fully achieved. In line with the above statement,

Ogwo and Oranu (2006) observed that good workshop management techniques do enable students to exercise self-control in obeying rules. It also influences the amount of time the students are engaged in meaningful learning. It as well enables the teacher, with the aid of workshop attendants and other personnel in the workshop to ensure that records are kept, materials are supplied/improvised and cared for, tools and equipment are well maintained and accident are prevented.

However, according to Ede and Attam (2010), the situation seems to differ in workshops in federal university minna where there are frequent damage to tools and machines, waste of materials by students. Many workshops are not organized and planned for daily routine activities. Accidents occur frequently in the workshop and the few facilities in these workshops are not well managed to achieve the objectives of skill training programmes. In order to improve the teaching, it is therefore necessary that the lecturers and technologist should be prepared adequately in the act of workshop management. Mbaga (2018) stressed that some of the available facilities have been grounded and overstretched. It is probable that workshop facilities management practices adopted by the lecturers and technologist may be responsible for these. This study therefore, focused on the assessment of workshop facilities management practices of federal university of technology minna, Niger State.

## **1.2 Statement of the Problem**

Workshop management techniques are necessary in every workshop for effective teaching of the course is to be achieved. This is because it enables the teacher to effectively deliver his/her lesson to the students. It involves the planning, organization, coordination, controlling, implementation and evaluation of the workshop instruction. Ede and Alegbemi (2010) stated that workshop as a place of practical work and study, the quality of instruction and learning is

positively influenced by the manner the workshop is managed. Koontz and Weihrich (2011) stressed that better teaching of skill oriented courses for success of any educational goals and objectives depends very much on the managerial techniques adopted and efficient utilization of the available resources. Unfortunately, the management of workshop in Federal University of Technology Minna leaves a lot to be desired, some workshops are not effective.

However, according to Ede (2010), the situation seems to differ in workshops in Federal University Minna where there are frequent damage to tools and machines, waste of materials by students. Many workshops are not organized and planned for daily routine activities. Accidents occur frequently in the workshop and the few facilities in these workshops are not well managed to achieve the objectives of skill training programmes. In order to improve the teaching, it is therefore necessary that the lecturers and technologist be prepared adequately in the act of workshop management. Mbaga (2018) stressed that some of the available facilities have been grounded and overstretched. It is probable that workshop facilities management practices adopted by the lecturers and technologist may be responsible for these. The task of this study therefore is to assess the workshop facilities management practices of Federal University Of Technology Minna, Niger State with the view of the alternative solution to the problem.

### **1.3 Purpose of the Study**

The main purpose of this study is to determine the Electrical technology workshop facilities management practices in Federal University of Technology Minna, Niger State. Specifically, the study will identify:

1. The workshop facilities planning practices in Federal University of Technology Minna.

2. The workshop facilities organization practices in Federal University of Technology Minna.
3. The workshop facilities coordinating practices in Federal University of Technology Minna.
4. The workshop facilities evaluation practices in Federal University of Technology Minna.

#### **1.4 Significance of the Study**

The findings of the study will be of immense benefit to the following; lecturers and workshop technologist, students and school management.

Lecturers and workshop technologist will benefit from the findings on planning practices for workshop instruction in the sense that it will provide or equip them with technique for planning of their lessons, selection of workshop projects, and selection of workshop instructional objectives, selection of appropriate materials, tools and equipment. Also findings on organizing practice for workshop instruction will be of benefit to lecturers and workshop technologist in the sense that it will help them to make choice of what to teach, when to teach, and how to teach in the workshop. And also help them to know how equipment and tools are organized in the sequence like uses, sizes and colour for easy reference and accountability, arranged tools and identify worn out, broken and lost ones, so that lost or damaged tools be replaced for continuity of the programme. Again findings on coordinating technique for workshop instruction will be of benefit to lecturers and workshop technologist in the sense that it provide knowledge to them on taking decision on suitable time for workshop instruction, sharing of specific roles to students with major school events, fixing of workshop lessons to avoid clashing with major school events, grouping of students based on work station available. In the same vein, findings on evaluation

practices for workshop instruction will be of benefit to them in the sense that, it enables the lecturers and workshop technologist to know how to assess the level of practical skill acquired by the students.

Students will benefit from the findings on planning practice in the sense that, it will provide the students with knowledge on how to select materials, tools and equipment for their practical lessons, know the step by step procedure of carrying out their practical projects. Also the findings on organizing practices will benefit students in this way, to know how equipment and tools are organized in sequence like uses, arrangement of tools so that their lecturers and workshop technologist can inspect and immediately identify worn out tools after their practical lessons, how tools are arranged according to sizes and colour for easy reference and accountability.

School management will benefit from the findings on the planning practices for workshop instruction in the sense that it will help the school management to identify and provide materials, tools, equipment and safety devices that are needed in the workshops. Also findings on organizing practices for workshop instruction will be of benefit to the school management in the sense that, it will help the school management to know how, tools and equipment are organized in sequence like uses, in the school workshop, delegating functions to his subordinates, bringing together both human and physical resources to achieve the goals and objectives of the programme. Again findings on coordinating practices for workshop instruction will be of benefit to the school management in the sense that, they will know how workshop programme and activities are brought together, harmonized and unified for effectiveness of workshop instructions.

### **1.5 Scope of the Study**

The study is conducted to cover only workshop facilities management practices in tertiary institutions in minna, Niger State. The main variables to be covered by this study are planning, organizing, coordinating and evaluating techniques. Variables such as controlling, leading, directing etc. were not covered. The workshop technologist and lecturers will be the respondents for the study.

### **1.6 Research Questions**

Below are the research questions guiding the study:

1. What are the workshop facilities planning practices in Federal University of Technology Minna?
2. What are the workshop facilities organization practices in Federal University of Technology Minna?
3. What are the workshop facilities coordinating practices in Federal University of Technology Minna?
4. What are the workshop facilities evaluation practices in Federal University of Technology Minna?

### **1.7 Hypotheses**

The following null hypotheses that will be tested at 0.05 level of significance:

**H<sub>01</sub>:** There is no significant difference in the mean responses of lecturers and workshop technology on the workshop facilities planning practices in Federal University of Technology Minna

**H<sub>02</sub>:** There is no significant difference in the mean responses of lecturers and workshop technology on the workshop facilities organization practices in Federal University of Technology Minna.

## **CHAPTER TWO**

### **REVIEW OF RELATED LITERATURE**

The review of related literature to this study is organized under the following subheadings:

#### **2.2 Conceptual Framework**

2.1.1 Workshop management

2.1.7 Planning practice for workshop facilities

2.1.8 Organizing practice for workshop facilities

2.1.9 Coordinating practice for workshop facilities

2.1.10 Techniques practices for implementing workshop facilities

2.1.11 Evaluation practice for workshop facilities

#### **2.2 Related Empirical Studies**

#### **2.3 Summary of Review of Related Literature**

### **2.1.1 Workshop Management**

The school workshop in the reasoning of Umar (2010) refers to infrastructural facility containing tools, equipment, utilities and spaces for conducting technological and technical instructional activities. According to him, in order to build a successful career for the technical teachers and a guaranteed skill workforce for the sustainable development in Nigeria, there should be an adequate and efficient management of training workshop in the technical schools.

Management according to Ogbonna (2013) has several definitions based on the purpose and context of the organization. As a result, there is no single universally accepted standard definition of management by management scholars. He further pointed out that even the existing definitions of management change as the environment or organization continue to change. However, he looks at management as a process of decision-making and control over the action of human, material and financial resources for the express purpose of attaining predetermined goals. Adesina in Ogunsaju (2016), sees management as organizing and mobilizing of all human and material resources in a particular system to the achievement of identified objectives in the system. According to Koontz, Donnel and Weihrich in Ogbonna (2013), management may be viewed as the process of allocating as well as organization's input (human and material) resources through planning, organizing, directing, and co-ordinating for the purpose of producing goods and services desired by customers so that organizational objectives are accomplished.

A technique as described by Hornby (2001) is a particular way of doing things especially one in which you have to learn a special skill. Considering the above definitions, one can rightly state that workshop management techniques in school setting is the planning, organizing,

coordinating, controlling, directing and evaluating the human, material and financial resources in a particular manner to achieve effective and efficient teaching-learning process in schools.

Technology according is the application of scientific knowledge to practical purposes. In view of Alegbemi (2010), technology is the process of training of person in different types of occupations for the development of scientific ideas and knowledge and being up to date as new methods are being introduced for the service of man. According to him a nation's level of technology depends on the extent to which current scientific knowledge is put to practical use. Technology is further defined by new student Encyclopedia (2001) as the use of scientific knowledge to develop and produce goods and services useful to man. That is, technology provides methods and tools which raise the user operational skills, abilities, energies, mental horizon and consistently productivity and welfare.

The major concern of good workshop management is the identification and judicious utilization of available resources to achieve the objective of helping the learners to learn and to encourage them to want to learn (Ogwo & Oranu, 2006). In essence, workshop management has to do with the process of bringing out the best from the workshop personnel so as to achieve the set goals and objectives of practical lesson. Effective workshop management in teaching-learning situation refers to the ability to maintain harmony and order in the workshop (Lofafa & Polongana, 2001).

Oranu (2001) stated that the management of a school workshop should be concerned with planning, designing and arrangement of the physical facilities in order to attract attention of inquisitive learners and government investment. He further said that wisely utilized and consciously protected facilities in any school workshop will as well continue to retain the

support of the government in promoting basic standard of good workshop management functions.

### **2.1.2 Planning practice for workshop facilities**

Students are expected to be trained to attain full occupational mastery in their respective fields. As this will enable them to be self-employed or gainfully employed in companies and industries. In order to achieve this, the planning of school workshops becomes necessary, as this would improve the effectiveness of instructional outcomes and consequently will lead to the production of efficient graduates.

Umar (2010) stated that the effectiveness of any type of school workshop in meeting its specific function for a desirable outcome requires efficient planning by teachers and instructors. The reasons for proper planning of workshop instructions according to Elom (2019) are:

- To understand what has been in the shop in the past and then set the purpose for what is desired tomorrow.
- To overcome pit falls and what might hinder the success in carrying out practicals in the workshop and for the subsequent instructions preceding the practicals.
- To simplify the teaching and learning of skills through instructions.
- To provide a replica of environment in which the learner must subsequently work.
- To ensure that the training activities are done with the same tools and equipment as the one used in the industrial workshop.
- To obey all the theories principles and practical of work.

- To ensure that the individual in the workshop are properly equipped through educational activities to acquire the needed skills to enhance their employabilities in the world of work.

According to Nwachukwu (2011), planning techniques for workshop instructions is that systematic processes which concern with establishing objectives, strategies and guidelines that would lead to the achievement of set objectives. Oranu (2011) revealed that the first management function of any teacher for workshop instruction is planning. He stressed that a good plan gives direction to the workshop teacher and his sub-ordinates for all they intend to undertake.

Umar (2010) stated that the guidelines for planning school workshop must include consideration for the development of each learner, the talented and the handicapped. He added that the learning environment must be flexible, safe, secure, accessible and organized. Nwachukwu (2011) opined that for the planning to be effective in school workshop instructions, the followings should be considered.

- Availability of Adequate Materials, Tools and Equipment for Workshop Practice.
- Proper Scheduling of Workshop Activities.
- Proper Arrangement in Workshop Practice.
- Ensuring of Safety Provision in Workshop Practice.

### **2.1.3 Organizing practice for workshop facilities**

Organization in the context of workshop instruction according to Ogunsaju (2016) is the arrangement of all necessary resources including human, tools, equipment and materials in a systematic order. Requisite tools, equipment and materials for workshop instruction need to be organized for easy identification, retrieval, utilization, reference, accountability, etc. Ede (2010)

stressed that these tools and equipment should be arranged so that supervisors can inspect and identify immediately worn-out broken and lost ones in order that it should be replaced for continuity of the programme.

Ezeji (2013) likened organization in context of workshop instruction as the necessary preparation a teacher makes in assembling the instructional materials for teaching his lesson as indicated in his lesson plan. Adebessin (2013) in his view looked at organization generally as a skeleton of framework on which management is built. In organizing school workshop, the teacher of technology must see to it that all personnel to be involved in instructional process should have their respective roles defined. Also careless loss of tools and materials due to pilfering or vandalism must be constantly checked. Ahmad (2010), Ede (2010) in their contribution on organization of school workshop instruction said it involves various techniques such as:

- Arranging for Procurement of Tools and Materials to be used in School Workshop
- Arranging for Activities to achieve effective Workshop Instructions
- Arranging Students in Groups to Execute Particular Workshop Projects

#### **2.1.4 Coordinating practice for workshop facilities**

According to Mbaga (2018) co-ordinating is the bringing together of related activities in school workshop to ensure a frictionless flow of work. Wale (2014) looked at co-ordinating process in terms of workshop management as ensuring that workshop programmes and activities are being brought together, harmonized and unified for effectiveness of workshop instructions. Akpakwu (2018) in his contribution said that co-ordinating is the synchronization of the staff, students and material resources to achieve effective workshop instructions. According to him technical

teachers and instructors could achieve effective instructions in their workshops by carrying out the following coordinating activities among others with the students thus:

Supervising students work activities in the workshop.

- Ensuring that different tools and equipment are harmoniously used in the workshops.
- Interpreting and analyzing different types of practical projects to the students.
- Ensuring that the efforts of the individual students are unified.

### **2.1.5 Techniques practices for implementing workshop facilities**

Implementation in the context of school workshop management means putting into action all the activities planned and organized in the workshop. In other words, it is the actual execution of planned and organized activities of the school workshop. According to Olaitan and Mama (2001) before any implementation can take place there must be a plan and organization of resources for making that plan effective when put into action. This is similar to the activities of a classroom teacher who plans his lesson, identifies and assembles instructional materials to be used before entry into the classroom. The teacher later enters the classroom to deliver the lesson (implement the lesson) to the students. In the words of Olaitan and Mama (2001) as earlier stated above, the teacher has observed the principles of planning and organizing before implanting. The teacher of technology therefore, should plan and organize school workshop activities using his competence and experience before finally executing or implementing the workshop planned activities in the schools shop. The following implementation activities are necessary among others for effective instructions in workshop, thus:

- Preparation of a Time Table of the School Workshop Activities.
- Adhering Strictly to the Programme of Workshop Activities.

- Reviewing of the Programme of Workshop Activities Periodically.
- Relating Teaching to Work Situation.

### **2.3.2 Evaluation practice for workshop facilities**

Nwachukwu (2011) looked at evaluation in an educational setting as the process of determining how much learning the students have acquired. In general terms, it is the process of reaching decisions. Patizhiko (2013) definition of evaluation pertaining to workshop instructions consider it as the process of assessing the effectiveness of workshop lessons in relation to its objectives using appropriate measuring techniques and providing feedback.

The evaluation of instructional programmes in education has unique purpose. This emanates from the nature of technical education. It is regarded as that aspect of education which leads to the acquisition of practical and applied skills as well as basic scientific knowledge (National Policy on Education, 2010). For this reason, evaluation is more than examining the achievement of objectives from learners, nor the evaluation of the teachers. It includes the evaluation of objectives, personnel, student's organization, content, teaching methods, facilities, equipments and other resources.

Evaluation of students in classroom does not vary very much from the evaluation of students in other academic areas (Ud1h, 2003).

However, evaluation of students in the workshop, laboratory or fieldwork settings differ from ordinary classroom evaluation. Education of technical students in these settings according to Udoh (2013), emphasize cognitive, psychomotor and affective domains of learning. This kind of evaluation is said to include the process as well as the product which emphasis are laid on development of procedures, skills, development and work habits (Udoh, 2003).

In evaluating students technical teachers should use variety of procedures. Udoh (2013) has suggested the following procedures which could be used by technical teachers for assessing performances of their students:

- Performance or practical tests
- Oral responses and examinations
- Written tests and examinations which should be essay type or objectives
- Self-evaluation by students
- Individual score card and check lists
- Completed assignment or projects
- Personal interviews and observations
- Note books
- Record books

Before evaluating the workshop experience of students, there should be an opportunity for the teacher to review and determine the different perspectives of the students. This review will help the teacher to determine the genuiness of the procedure used by the students to carry out the work, the problems encountered during the work and the information on experiences gained by the student's on completion of work.

According to Nwachukwu (2011), what the teacher really needs to find out following the review of students perspective is whether:

- The materials required for practical in the workshop were sufficiently supplied and then the quantity used for work.

- There is any particular step in the procedure for doing work that is not clear to the students.
- There is any particular step in the procedure for doing the work that is particularly difficult and hazardous for students during the work experience.
- There are tools or equipment that were particularly difficult to operate or did not function in the work.
- There are certain aspects of the work experience that should require more time to be completed.
- The information collected after the work experience was clear and useful to the students.
- The students can organized and analyze the information so collected.
- There are some resources of misinformation in the work experience that has been completed.
- There are some steps in the procedure to complete the work experience that should be modified.

It is the responsibility of the teacher to assess the students so as to ensure that they have achieved the objectives of their lessons. When these students are in individual workshop work, it is always necessary for them to discuss their individual results, data collected and experiences gained. The idea is to ensure that these students expose themselves to various problems – solving techniques in the workshop. Results of workshop experiences can help students formulate generalization focus on concepts and evaluate the importance and relevance of the work experience they have done.

After this review, the teacher can now critically analyze and evaluate the effectiveness of the students' work experiences. To properly evaluate the workshop instructions, the teacher should use the present behavior of the students to determine if there are behavioural changes as a result of the working experiences. In the view of Nwachukwu (2011), for the successful assessment of the effectiveness of work experience, it is necessary for the teacher to find out:

- How much knowledge, skills and problems-solving experience the students have acquired. This can be done by assigning similar tasks to the students and recording their performances on the new task.
- How the materials provided were used to finish the work, that is, how accurate the finish work is.
- How much time was used in completing the work?
- How convincing and useful is the information gathered from the work experiences by the students.
- The levels of competencies with which students can now perform similar task in the same or related occupations.

When students in the workshop perform different tasks, the teacher should evaluate the effectiveness of each of these jobs and decide if the procedure for carrying them out was clear enough. In other words, the teacher must evaluate students' work experiences immediately after completion to determine the value of building in such experiences in the programme of the school, as well as determining what further activities these students can accomplish.

## **2.2 Related Empirical Studies**

Agu (2002) in descriptive survey study investigated on effective management of workshop resources in selected secondary schools in Nassarawa State with the purpose of determining the teachers perceptions on management practices used for the teaching of introductory technology. He specifically wanted to determine teachers' perceptions on organization of facilities and maintenance practices in the workshops as well as budgeting for the workshops. A total of 84 introductory technology teachers and 30 principles were randomly selected from selected secondary schools in eight (8) educational zones of Nassarawa State to participate in the study. A questionnaire was used as an instrument for gathering data for the study. The following findings were made: The State of introductory technology workshops in secondary schools in Nassarawa State is deplorable since teachers are over loaded due to the introduction of UBE programme and they have no time to organize the workshops. The secondary schools in Nassarawa State lack maintenance culture. Proper budgeting and funding for the schools' workshops are the major problems in secondary schools in Nassarawa State.

Ede (2010) conducted a study on the workshop management techniques needed for improving the performance of metalwork teachers in Technical Colleges in Abia and Enugu States. The main purpose of the study was to identify the planning, organizing, coordinating and the evaluating techniques that are required by metalwork teachers for improving their performance in managing the technical schools' metal workshops. The survey research design was employed for the study. A total sample size of 62 (16 heads of departments and 46 metal work teachers) respondents were randomly selected and used for the study. A structured questionnaire was used for data collection. The mean and t-test were used for data analysis. Findings from the study indicated that the following techniques were needed for improving the performance of

metalwork teachers in technical colleges in Abia and Enugu States. Thus: the planning technique includes, among others, drawing up programme plan, consideration of duration for workshop lesson, setting standards for metalwork activities and developing work objectives in measurable terms. The organizing technique include, among others, arrangement of tools so that the supervisor can inspect and identify immediately iron out, broken and lost ones as well as delegating functions to those involved in the workshop lesson.

Abdulkareem (2012) carried out a study on the organization and management of technical college's woodwork, workshop in Kwara state. The study also determines the general opinion of teachers and students about the organization and management of technical college's woodwork, workshop in particular and how school Authority maintained the workshop equipment. A questionnaire containing twenty-one items was used to investigate the organization and management of technical college woodwork, workshop. Three research questions were drawn, three hypotheses were formulated and the mean was used to answer the research questions while the t-test was used to test the null hypothesis at 0.05 level of significance. The result obtained showed that the workshop affect student performance, because students are willing to learn and perform very well if machine and equipment in the workshop are functioning. In conclusion, suggestion and recommendations were made among others that the state government should provide adequate supply of equipment and materials to technical college's woodwork, workshop and adequate technical woodwork, workshop should be provided for the school to house all the equipment, machine and tools for teaching and learning.

Abdulkadir and Ma'aji (2014) carried out a study on workshop facilities management practices in Technical Colleges of Niger State. Four research questions were formulated to guide the conduct of the study. A descriptive survey research design was employed for the study. The

study was carried out in all the Technical Colleges in Niger State. A total of 488 respondents comprising 443 technical teachers and 45 administrators were used as population for the study. A structured questionnaire developed by the researcher was used for the data collected for study. The instrument was face and content validated by three lecturers. Mean and standard deviation were the statistical instruments used to analyze the data for answering research questions, The findings of the study revealed among others that technical teachers were not allowed to participate in the planning of the workshop facilities, workshop facilities were not stored according to their characteristics and preventive maintenance are not regularly observed. Based on the findings it was recommended that technical teachers should be involved in the planning of workshop facilities, workshop facilities should be stored according to their characteristics and preventive maintenance should be observed regularly in the workshop.

Mbaga (2018) conducted a research on the adequacy of workshop facilities to facilitate effective teaching and learning process in Colleges of Education (Technical) in north eastern States of Nigeria. Two research questions guided the study. The research adopted a descriptive survey design. The study was conducted in Bauchi, Gombe, Taraba and Yobe States of Nigeria. The population of this study consisted of forty-five (45) workshop instructors. Data were collected through the use of checklist and questionnaire. The instrument has a reliability coefficient of 0.76. The findings showed that Workshops space in Colleges of Education (Technical) in North eastern States of Nigeria were inadequate.. Most of the equipment, tools, and machines available in the colleges were not enough to cater for increasing population of students' enrolment. The study recommended that the Federal and States owned Colleges of Education (Technical) should be provided with adequate workshops and training facilities to cater for the increasing students' population. This will in turn promote teaching and learning.

### **2.3 Summary of Review of Related Literature**

Literature reviewed in this study covered concepts of workshop management, planning practice for workshop facilities, organizing practice for workshop facilities, coordinating practice for workshop facilities, techniques practices for implementing workshop facilities, evaluation practice for workshop facilities. The literature reviewed has shown how these management techniques can be applied for effective workshop instructions. The literature reviewed also has highlighted and provided important and useful information on how best the to manage the limited resources such as staff, money, materials and machines available for them to achieve the school objectives in techniques that would help to review any deficiency in the management of workshops. Extensive empirical studies have been reviewed on workshop practices. The review shows that no work to the knowledge of the researcher has been done on workshop management techniques.

## **CHAPTER THREE**

### **3.0 METHODOLOGY**

#### **3.1 Design of the Study**

The study adopted the descriptive survey research design. Survey design according Nworgu (1991) is aimed at collecting data on and describing in a systematic manner, the characteristics features or facts about a given population. Osuala (2005) said that it is a design which studies the characteristics of people, the vital facts about people and their beliefs, opinions, attitude, motivation and behavior.

#### **3.2 Area of the study**

The study was carried out in the department of Industrial and Technology Education and the department of mechanical engineering of Federal University of Technology Minna. Niger state falls on the land mass area of about 76,363km<sup>2</sup> and with the population of about 3,950,349 (NPC, 2006).

#### **3.3 Population for the Study**

The population for the study consists of 34 respondents comprising 30 lecturers (22 lecturers from the department of ITE and 8 lecturers from the department of Mechanical Engineering) and 4 workshop technologist from the department of ITE and department of Mechanical Engineering.

#### **3.4 Sample and Sampling Technique**

There is no sampling since the population was small and manageable.

#### **3.5 Instrument for Data Collection**

The instrument that is use in collecting data for the study was structured questionnaire. The questionnaire was made up of five sections (A, B, C, D and E). Section 'A' contains items on

personal information of the respondents. Section 'B' seeks the workshop facilities planning practices in tertiary institutions in Minna and it contains 10 items. Section 'C' contains 10 items designed to find out workshop facilities organization practices in tertiary institutions in Minna while Section 'D' contains 10 items to find out workshop facilities coordinating practices in tertiary institutions in Minna. Section 'E' contains 9 items designed to find out workshop facilities evaluation practices in tertiary institutions in Minna. The questionnaire items were based on four points scale types. The response categories for section 'B', 'C', 'D' and E are strongly Agree (SA), Agree (A), and Disagree (D) and strongly disagree (SD). These response categories will be assign numerical values of 4, 3, 2 and 1 respectively. Respondents were require checking (✓) against the response category that best satisfies their opinion.

### **3.6 Validation of instrument**

The instrument was validated by three lecturers in the department of Industrial and Technology Education, Federal University of Technology, Minna and contributions on the appropriateness of the instrument was considered in the production of the final copy of the research instrument (see appendix A).

### **3.7 Administration of instrument**

The instrument that was used for the data collection was administered to the respondents by the researcher and three research assistant in the study area.

### **3.8 Method of data analysis**

Data collected was analyzed using mean and standard deviation for the research questions while t-test was used to test the hypothesis at the 0.05 level of significant. A four (4) point rating scale will be to analyze the data as shown below.

Strongly Agree (SA) = 4points (3.5 – 4.0)

Agree	(A)	=	3points (2.5 - 3.49)
Disagree	(D)	=	2points (1.5 – 2.49)
Strongly Disagree	(SD)	=	1point (1.0 – 1.49)

Therefore, the mean value of the 4 point scale is:

$$\bar{X} = \frac{4+3+2+1}{4} = \frac{10}{4} = 2.5$$

### 3.9 Decision Rule

The cutoff point of the mean score of 2.50 was chosen as the agreed or disagreed point. This was interpreted relatively according to the rating point scale adopt for this study. Therefore, an item with response below 2.49 and below were regarded or considered as disagreed while an item with response at 2.5 and above was regarded or considered as agreed. The null hypotheses were tested using t-test statistics at 0.05 level of significance in order to compare the mean responses of the respondents. A critical value of  $\pm 1.960$  was selected based on the degree of freedom at 0.05 level of significance. Therefore, every item with t- calculated values less than the critical value was regarded as not significant while every item with t-calculate value equal or greater than the critical value was regarded as significant.

## CHAPTER FOUR

### PRESENTATION AND ANALYSIS OF DATA

#### 4.1 Research Question 1

What are the workshop facilities planning practices in Federal University of Technology Minna?

**Table 4.1: Mean responses of lecturers and workshop technology on the workshop facilities planning practices in Federal University of Technology Minna.**

S/N	ITEMS	N <sub>1</sub> = 30		N <sub>2</sub> =4
		$\bar{X}$	SD	Remark
1	Provision of adequate funds for the purchase of consumable materials such as cables and maintenance of existing facilities	3.58	0.52	Agreed
2	Providing adequate number of technology tools and equipment in the workshop	3.44	0.52	Agreed
3	Equipment and materials should be planned based on technology curriculum	3.38	0.49	Agreed
4	Workshop stores should be provide for safety of consumables	3.45	0.53	Agreed
5	Locating machines, switches and socket outlets for convenience and safety in workshop	3.48	0.50	Agreed
6	Tools, equipments and materials used in teaching technology should be planned for yearly	3.50	0.55	Agreed
7	Selection of practical projects with the ability of technology students	3.33	0.47	Agreed
8	Planning the workshop to take care of students practical work in areas of construction of appliances	3.28	0.55	Agreed
9	Adopting borrower-loss replacement system in workshop	3.40	0.61	Agreed
10	Provision for adequate ventilation, illumination and artificial lighting	3.44	0.52	Agreed

N=34

$\bar{X}$  = mean of the respondents

N<sub>1</sub> = Lecturers

N<sub>2</sub>= Workshop technologist

SD = standard deviation of the respondents

Table 4.1 showed that both the Lecturers and workshop technologist agreed on all items from 1 to 10. This is because none of the mean response was below 2.50 which was the benchmark of agreed on the 4-points response options. The standard deviation score ranged between 0.47 and 0.61. This showed that the responses of the Lecturers and workshop technologist on the items were not divergent.

## 4.2 Research Question 2

What are the workshop facilities organization practices in Federal University of Technology Minna?

**Table 4.2: Mean responses of lecturers and workshop technology on the workshop facilities organization practices of federal university of technology Minna.**

		N <sub>1</sub> = 30 N <sub>2</sub> =4		
S/N	ITEMS	$\bar{X}$	SD	Remark
1	Arranging the equipment to facilitate teaching and learning of technology	3.29	0.56	Agreed
2	Equipment and tools should be organized based on uses and size for easy reference and accountability in workshop	3.31	0.57	Agreed
3	Arrangement of tools and materials before and after use in workshop	3.25	0.61	Agreed
4	Proper keeping of records of all the workshop equipment and tools	3.24	0.56	Agreed
5	Tools and equipment in workshop should be organized arranged so that supervisor can inspect and identify immediately worn out, broken and lost ones	3.31	0.54	Agreed
6	Hazardous substances or materials must not only be stored securely but should be under control in workshop	3.34	0.50	Agreed
7	Constant checking of tools and materials to avoid loss due to pilfering or vandalism	3.46	0.55	Agreed
8	Tools and equipment in workshop should be used for activities they are designed for	3.46	0.64	Agreed

9	Work areas in workshop should be designated and equipped for each skill area such as installation, maintenance, repairs, design and construction	3.14	0.61	Agreed
10	Preventive maintenance should be carried on technology facilities to avoid break down	3.18	0.52	Agreed

**N=34**

$\bar{X}$  = mean of the respondents

**N<sub>1</sub>** = Lecturers

**N<sub>2</sub>** = Workshop technologist

**SD** = standard deviation of the respondents

Table 4.2 showed that both the Lecturers and workshop technologist agreed on all items from 1 to 10. This is because none of the mean response was below 2.50 which was the benchmark of agreed on the 4-points response options. The standard deviation score ranged between 0.47 and 0.61. This showed that the responses of the Lecturers and workshop technologist on the items were not divergent.

### 4.3 Research Question 3

What are the workshop facilities coordinating practices in Federal University of Technology Minna?

**Table 4.3: Mean responses of lecturers and workshop technology on the workshop facilities coordinating practices in Federal University of Technology Minna.**

S/N	ITEMS	$\bar{X}$	<b>N<sub>1</sub>= 30</b>	<b>N<sub>2</sub>=4</b>
			<b>SD</b>	Remark
1	Grouping students to execute specific working projects in technology workshop	3.34	0.50	Agreed
2	Arranging of workshop facilities available for different uses in workshop	3.31	0.54	Agreed
3	Inventory and inspection of tools and equipment in workshop should be carried out periodically	3.31	0.52	Agreed
4	In workshop materials and tools should be allocated to groups or individuals for different uses	3.28	0.45	Agreed

5	Make sure that effort of individual students are unified in workshop	3.24	0.46	Agreed
6	Interpreting and analyzing different types of projects to the students individually and in groups in workshop	3.29	0.48	Agreed
7	Make sure that different tools and equipment are harmoniously used in workshop operations	3.29	0.51	Agreed
8	Improving the security arrangement in the workshop by checking pilfering of tools by both staff and students	3.40	0.61	Agreed
9	Improving the safety arrangement in the workshop by providing different safety devices	3.35	0.59	Agreed
10	Ensuring maintenance of different machines and equipment in the workshop	3.35	0.53	Agreed

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**N=34**

$\bar{X}$  = mean of the respondents

**N<sub>1</sub>** = Lecturers

**N<sub>2</sub>** = Workshop technologist

**SD** = standard deviation of the respondents

Table 4.3 showed that both the Lecturers and workshop technologist agreed on all items from 1 to 10. This is because none of the mean response was below 2.50 which was the benchmark of agreed on the 4-points response options. The standard deviation score ranged between 0.47 and 0.61. This showed that the responses of the Lecturers and workshop technologist on the items were not divergent.

#### **4.4 Research Question 4**

What are the workshop facilities evaluation practices in Federal University of Technology Minna?

**Table 4.4: Mean responses of lecturers and workshop technology on the workshop facilities evaluation practices in Federal University of Technology Minna.**

S/N	ITEMS	$\bar{X}$	<b>N<sub>1</sub>=30</b>	<b>N<sub>2</sub>=4</b>
			<b>SD</b>	Remark
1	Lecturers and workshop technologist in evaluating workshop instruction should find the tools and equipment that were particularly difficult to operate or did not function in making the project	3.58	0.52	Agreed
2	Lecturers and workshop technologist should note the steps in the procedure to complete the project that needed modification	3.44	0.52	Agreed
3	How accurate is the finish project should be an evaluation question in evaluating workshop instruction	3.38	0.49	Agreed
4	Lecturers and workshop technologist in evaluating workshop instruction should note any particular step in the procedure that is hazardous	3.45	0.53	Agreed
5	How much time was used by the students in completing the project assigned to him	3.48	0.50	Agreed
6	How much knowledge and skills the students have acquired should form one of the evaluation questions in evaluating workshop instruction	3.50	0.55	Agreed
7	In evaluating workshop instruction, Lecturers and workshop technologist should ask what was his achievement and failure after the lesson	3.33	0.47	Agreed
8	In evaluating workshop instruction Lecturers and workshop technologist should ask “was the technique he used too hard or easy?”	3.28	0.55	Agreed
9	In evaluating workshop instruction Lecturers and workshop technologist should ask himself “was there enough skills acquired by the learner?”	3.40	0.61	Agreed

**N=34**

$\bar{X}$  = mean of the respondents

**N<sub>1</sub>** = Lecturers

**N<sub>2</sub>** = Workshop technologist

**SD** = standard deviation of the respondents

Table 4.4 showed that both the Lecturers and workshop technologist agreed on all items from 1 to 9. This is because none of the mean response was below 2.50 which was the benchmark of agreed on the 4-points response options. The standard deviation score ranged between 0.47 and 0.61. This showed that the responses of the Lecturers and workshop technologist on the items were not divergent.

#### 4.5 Hypothesis I

There is no significant difference in the mean responses of lecturers and workshop technologist on the workshop facilities planning practices in Federal University of Technology Minna

**Table 4.5 T-test on the workshop facilities planning practices in Federal University of Technology Minna.**

N <sub>1</sub> = 30 AND N <sub>2</sub> = 4							
<b>Respondents</b>	<b>N</b>	<b>X</b>	<b>SD</b>	<b>Df</b>	<b>Tcal</b>	<b>P-value</b>	<b>Remark</b>
<b>Lecturers</b>	30	3.39	0.52	32	0.489	0.06	NS
<b>Workshop Technologist</b>	4	3.47	0.52				

N=34

$\bar{X}_1$  = mean of Lecturers

$\bar{X}_2$  = mean of workshop technologist

N<sub>1</sub> = Lecturers

N<sub>2</sub> = Workshop Technologist

SD<sub>1</sub> = standard deviation of Lecturers

SD<sub>2</sub> = standard deviation of Workshop Technologist

NS=Not Significant

Table 4.5 showed that there was no significant difference in the responses of lecturers and workshop technologist on all the items as workshop facilities planning practices; therefore the null hypothesis of no significant difference was upheld at 0.05 level of significance.

#### 4.5 Hypothesis 2

There is no significant difference in the mean responses of lecturers and workshop technology on the workshop facilities organization practices of federal university of technology Minna.

**Table 4.5 T-test on the workshop facilities organization practices in Federal University of Technology Minna.**

<b>N<sub>1</sub> = 30 N<sub>2</sub> = 4</b>							
<b>Respondents</b>	<b>N</b>	<b>X</b>	<b>SD</b>	<b>Df</b>	<b>Tcal</b>	<b>P-value</b>	<b>Remark</b>
<b>Supervisors</b>	22	3.28	0.53	78	0.539	0.10	NS
<b>Technical teachers</b>	58	3.35	0.56				

**N=34**

$\bar{X}_1$  = mean of Lecturers

$\bar{X}_2$  = mean of workshop technologist

**N<sub>1</sub>** = Lecturers

**N<sub>2</sub>**= Workshop Technologist

**SD<sub>1</sub>** = standard deviation of Lecturers

**SD<sub>2</sub>** = standard deviation of Workshop Technologist

**NS**=Not Significant

Table 4.5 showed that there was no significant difference in the responses of lecturers and workshop technologist on all the items as workshop facilities organization practices in tertiary

institutions in Minna; therefore the null hypothesis of no significant difference was upheld at 0.05 level of significance.

### **Findings of the study**

The following are the main findings of the study; they are prepared based on the research questions and hypothesis tested.

The finding on the workshop facilities planning practices in Federal University of Technology Minna all the respondents agree on all the items, among all is Government should set up coordinating units/boards to carry out survey of skills needed by industries and giving feed back to relevant departments.

The finding on the workshop facilities organization practices in Federal University of Technology Minna shows that showed that all the respondents agree on all the items, among all is Provision of programme of studies based on high academic standard can improve school industry partnership.

The findings workshop facilities coordinating practices in Federal University of Technology Minna shows that showed that all the respondents agree on all the items, among all is Assessment of training facilities of technical colleges to find out if they are capable of giving the students adequate background in those occupations required in the industry.

The findings on workshop facilities evaluation practices in Federal University of Technology Minna shows that showed that all the respondents agree on all the items, among all is In evaluating workshop instruction, Lecturers and workshop technologist should ask what was his achievement and failure after the lesson.

### **Discussion of findings.**

The finding on the workshop facilities planning practices in Federal University of Technology Minna all the respondents agree on all the items, among all are Provision of adequate funds for the purchase of consumable materials such as cables and maintenance of existing facilities, Providing adequate number of technology tools and equipment in the workshop, Equipment and materials should be planned based on technology curriculum, Workshop stores should be provide for safety of consumables, Locating machines, switches and socket outlets for convenience and safety in workshop, Tools, equipments and materials used in teaching technology should be planned for yearly, Selection of practical projects with the ability of technology students, Planning the workshop to take care of students practical work in areas of construction of appliances, Adopting borrower-loss replacement system in workshop, Provision for adequate ventilation, illumination and artificial lighting. These findings were in agreement with the finding of Elom (2009) that proper planning for equipment based on electrical technology curriculum is one of the workshop planning practices for effective teaching to take place in the workshop.

The finding on the workshop facilities organization practices in Federal University of Technology Minna shows that showed that all the respondents agree on all the items, among all are Arranging the equipment to facilitate teaching and learning of technology, Equipment and tools should be organized based on uses and size for easy reference and accountability in workshop, Arrangement of tools and materials before and after use in workshop, Proper keeping of records of all the workshop equipment and tools, Tools and equipment in workshop should be organized arranged so that supervisor can inspect and identify immediately worn out, broken and lost ones, Hazardous substances or materials must not only be stored securely but should be

under control in workshop, Constant checking of tools and materials to avoid loss due to pilfering or vandalism, Tools and equipment in workshop should be used for activities they are designed for, Work areas in workshop should be designated and equipped for each skill area such as installation, maintenance, repairs, design and construction, Preventive maintenance should be carried on technology facilities to avoid break down. These findings were in line with the opinion of Ahmad (2010) that arranging the equipment to facilitate teaching and learning of electrical technology is an organizing technique.

The findings on workshop facilities coordinating practices in Federal University of Technology Minna shows that showed that all the respondents agree on all the items, among all are Grouping students to execute specific working projects in technology workshop, Arranging of workshop facilities available for different uses in workshop, Inventory and inspection of tools and equipment in workshop should be carried out periodically, In workshop materials and tools should be allocated to groups or individuals for different uses, Make sure that effort of individual students are unified in workshop, Interpreting and analyzing different types of projects to the students individually and in groups in workshop, Make sure that different tools and equipment are harmoniously used in workshop operations, Improving the security arrangement in the workshop by checking pilfering of tools by both staff and students, Improving the safety arrangement in the workshop by providing different safety devices, Ensuring maintenance of different machines and equipment in the workshop.

## **CHAPTER FIVE**

### **SUMMARY, CONCLUSION AND RECOMMENDATIONS**

#### **Summary of the Study**

The main focus of this research study was to find out the assessment of workshop facilities management practices in Federal University of Technology minna, Niger State.

Chapter 1 of the study discussed the background of the study. The statement of problem, purpose, significance, scope and the research questions were all stated and discussed for the conduct of this research.

The review of related literature looked into Workshop management, planning practice for workshop facilities, organizing practice for workshop facilities, Coordinating practice for workshop facilities, Techniques practices for implementing workshop facilities, Evaluation practice for workshop facilities. Various views of different authors concerning the topic were harmonized in a comprehensive literature review and empirical studies.

A survey approach was used to developed instrument for the study; the respondents identified as the population of the study were lecturers and workshop technologist. The entire respondents were used. The instrument used was analysed using frequency count, and mean

scores. The research questions were discussed base on the findings from the responses and results of the instrument used.

Implication of the study and conclusions were also drawn from the findings discussed. Recommendations and suggestions for further study were formulated and stated according to the findings of the study.

### **Implication of the Study**

The findings of this study have implications for the Government, school administrators. The government and the administrators will organize workshop and seminars based. The findings of this study have implications for the Government, school administrators on identified workshop management techniques needed by teachers for effective teaching.

The findings also have implication for lecturers in Federal University of Technology. The findings of the study will make them write textbooks on workshop management techniques.

### **Contribution to knowledge**

The study helps to improve workshop facilities management practices in Federal University of Technology Minna and ensure adequate delivery of the lesson to the student to acquire the aim and objectives of the lesson. Students need improvement in workshop facilities management practices s. Therefore the workshop facilities management practices could be used to train students in order to adequately equip with relevant skills.

### **Conclusion**

Based on the findings of the study, this occurred as a result of lack of workshop management techniques by the lecturers. A study was now conducted to identify workshop management techniques. Workshop planning techniques, organizing techniques, coordinating, techniques,

implementing techniques and evaluating techniques were then identified and found needed by lecturers and technology for improving their teaching or instruction.

### **Recommendations**

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

1. All the techniques identified in the study should be packaged to train students, workshop technologist and lecturers through workshop or seminars
2. Skilled technologist should be employed by the school to teach students in the institution
3. Workshop in institutions should be equipped with relevant modern machines and tools for the training of students

### **Suggestion for Further Study**

The following are suggested for further studies:

1. Workshop management techniques for improving teaching of in colleges of education or polytechnics in Nigeria
2. Capacity building needs of teachers for effective teaching of students in institutions in other state.

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**Appendix 1**

**QUESTIONNAIRE**

**FEDERAL UNIVERSITY OF TECHNOLOGY MINNA, NIGER STATE**

**SCHOOL OF SCIENCE AND TECHNOLOGY EDUCATION**

**DEPARTMENT OF INDUSTRIAL AND TECHNOLOGY EDUCATION**

**A QUESTIONNAIRE ON WORKSHOP FACILITIES MANAGEMENT PRACTICES IN  
TERTIARY INSTITUTIONS IN MINNA, NIGER STATE**

**INTRODUCTION:** Please kindly complete this questionnaire by ticking the column that best present your perception about the topic. The questionnaire is for research purpose and your view will be confidentially and strictly treated in response to the purpose of the research work.

**SECTION A**

**PERSONAL DATA**

Lecturers:

Workshop technologist:

Note: A four (4) point scale is used to indicate your opinion, tick the options which best describe your agreement as shown below:

Strongly Agree (SA) = 4points  
Agree (A) = 3points  
Disagree (D) = 2points  
Strongly Disagree (SD) = 1points

Section B: What are the workshop facilities planning practices in tertiary institutions in Minna?

S/N	Items	Scales			
		SA	A	D	SD
1	Provision of adequate funds for the purchase of consumable materials such as cables and maintenance of existing facilities				
2	Providing adequate number of technology tools and equipment in the workshop				
3	Equipment and materials should be planned based on technology curriculum				
4	Workshop stores should be provide for safety of consumables				
5	Locating machines, switches and socket outlets for convenience and safety in workshop				

6	Tools, equipments and materials used in teaching technology should be planned for yearly				
7	Selection of practical projects with the ability of technology students				
8	Planning the workshop to take care of students practical work in areas of construction of appliances				
9	Adopting borrower-loss replacement system in workshop				
10	Provision for adequate ventilation, illumination and artificial lighting				

1. Section C: What are the workshop facilities organization practices in tertiary institutions in Minna?

S/N	Items	Scales			
		SA	A	D	SD
1	Arranging the equipment to facilitate teaching and learning of technology				
2	Equipment and tools should be organized based on uses and size for easy reference and accountability in workshop				
3	Arrangement of tools and materials before and after use in workshop				
4	Proper keeping of records of all the workshop equipment and tools				
5	Tools and equipment in workshop should be organized arranged so that supervisor can inspect and identify immediately worn out, broken and lost ones				
6	Hazardous substances or materials must not only be stored securely but should be under control in workshop				
7	Constant checking of tools and materials to avoid loss due to pilfering or vandalism				

8	Tools and equipment in workshop should be used for activities they are designed for				
9	Work areas in workshop should be designated and equipped for each skill area such as installation, maintenance, repairs, design and construction				
10	Preventive maintenance should be carried on technology facilities to avoid break down				

Section D: What are the workshop facilities coordinating practices in tertiary institutions in Minna?

S/N	Items	Scale			
		SA	A	D	SD
1	Grouping students to execute specific working projects in technology workshop				
2	Arranging of workshop facilities available for different uses in workshop				
3	Inventory and inspection of tools and equipment in workshop should be carried out periodically				
4	In workshop materials and tools should be allocated to groups or individuals for different uses				
5	Make sure that effort of individual students are unified in workshop				
6	Interpreting and analyzing different types of projects to the students individually and in groups in workshop				
7	Make sure that different tools and equipment are harmoniously used in workshop operations				
8	Improving the security arrangement in the workshop by checking pilfering of tools by both staff and students				

9	Improving the safety arrangement in the workshop by providing different safety devices				
10	Ensuring maintenance of different machines and equipment in the workshop				

Section E: What are the workshop facilities coordinating practices in tertiary institutions in Minna?

S/N	Items	Scale			
		SA	A	D	SD
1	Lecturers and workshop technologist in evaluating workshop instruction should find the tools and equipment that were particularly difficult to operate or did not function in making the project				
2	Lecturers and workshop technologist should note the steps in the procedure to complete the project that needed modification				
3	How accurate is the finish project should be an evaluation question in evaluating workshop instruction				
4	Lecturers and workshop technologist in evaluating workshop instruction should note any particular step in the procedure that is hazardous				
5	How much time was used by the students in completing the project assigned to him				
6	How much knowledge and skills the students have acquired should form one of the evaluation questions in evaluating workshop instruction				
7	In evaluating workshop instruction, Lecturers and workshop technologist should ask what was his achievement and failure after the lesson				
8	In evaluating workshop instruction Lecturers and workshop technologist should				

	ask “was the technique he used too hard or easy?”				
9	In evaluating workshop instruction Lecturers and workshop technologist should ask himself “was there enough skills acquired by the learner?”				