

EVALUATION OF THE ORGANIZATION AND MANAGEMENT OF WOOD WORKSHOP
IN TECHNICAL COLLEGES IN KWARA STATE

BY

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MATRIC NO: 2007/1/27075BT

DEPARTMENT OF INDUSTRIAL AND TECHNOLOGY EDUCATION

FEDERAL UNIVERSITY OF TECHNOLOGY, MINNA NIGER STATE

OCTOBER, 2012

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

IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF
BACHELOR OF TECHNOLOGY (B.TECH) IN INDUSTRIAL AND TECHNOLOGY
EDUCATION

OCTOBER, 2012

CERTIFICATION

I ABDULKAREEM ABDULRAHMAN, MATRIC NO. 2007/1/27075BT. 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.

Name

Signature

APPROVAL PAGE

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

Supervisor

Sign- Date

Head of Department

Sign- Date

External Examiner

Sign- Date

DEDICATION

This project is dedicated to my father Alhaji Abdulkareem, my mother Alhaja Wosilat Abdulkareem, my brothers and sisters.

ACKNOWLEDGMENTS

The researchers give glory and honor to Almighty Allah, who kept him alive all through his academic years and sustained him through His infinite love and mercy. The researcher`s profound gratitude goes to the my project supervisor, Dr, Engr P.A Omozokpia, despite his schedule, still created time to read, criticize, correct and given useful suggestion which contributed to the successful completion of this project, H.O.D Dr E.J. Ohize, Prof G.D. Momoh, Prof K.A salami, Dr A.S. Ma`aji, Dr R.O.Okori, B.M Mohammed, W.B Kareem, A.M Hassan, A.B Kagara, T.M Saba, J.F Maigida who have contributed in one way or another to the success of this work.

I am indebted to my brothers, sisters, friends and all well wishers and especially to all my sponsors for their great cares, understanding, cheers and prayers to you all.

Finally, I give God all the glory and adoration for all things in my life.

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ABSTRACT

This study was designed to evaluate the organization and management of technical colleges woodwork, workshop in Kwara state. The study also determines the general opinion of teachers and students about the organization and management of technical colleges 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 colleges 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.

CHAPTER ONE

INTRODUCTION

Background of the Study

It is an obvious truth that the realization of the objectives of technical education depend to a large extent on the availability of equipments and materials for teaching. Technical and vocational education is defined by the Federal Government of Nigeria (FGN) (1981) as “That aspect of education which leads to the acquisition of practical and applied skill as well as basic scientific knowledge”. The policy further gives the following aims of vocational and Technical education as:

- (i) To provide trained manpower in applied science, technology and commerce particularly in a sub-professional grades.
- (ii) To provide the technical knowledge and vocational skills necessary for agricultural, industrial, commercial and economic development.
- (iii) To provide people who can apply scientific knowledge to the improvement and solution of environmental problem for the use and convenience of man.
- (iv) To give an introduction to Professional studies in engineering and other technologies.
- (v) To give training and impart the necessary skills leading to the production of craftsman, technicians and other skilled personnel who will be enterprising and self- reliance,
- (vi) And to enable our young men and women to have an intelligent understanding of the increasing complexity of technology.

Technical and vocational education includes retraining which is given in schools under the public supervision and control. It refers to systematic learning experiences which are designed to fit individuals for gainful employment in recognised occupation as semi-skilled workers or technicians or sub-professionals. In this regard Bulus, (1991) maintained that, vocational/technical education involves the acquisition of skill and competencies that can help individuals to function productively in industries and commercial occupations. The definitions given above point to the fact that technical education is a means for uplifting the socio-economic, cultural and political standard of any nation. Technical education is the hub on which other development programmes of any nation revolve. It forms the base for the industrial take-off and provides the lubricant for steady a advancement.

The factors that hindered the growth of vocational and technical education in Nigeria according to Fafunwa (1974) and Enoh (1986) is the late introduction of technical education. Another factor is the low Prestige which practically based course attracted. Another major factor which militated against development of vocational and technical education in Nigeria is the cost. Fafunwa (1974) and Adesina (1977) agreed that, grammar schools and similar institution are relatively cheaper than vocational/technical colleges in terms of tools, equipment and materials. Shortage of qualified vocational and technical teachers is another major factor which militated against the development of vocational training in the Country. In the new educational policy, especially on Technical/vocational college which come into operation in 1982, has in its contents technical/vocational programmes with the aim of making the country self-reliant in the nearby future, by offering the pupils a training that would enable them acquire practical skill for a useful living, to achieves these aim and objectives, technical colleges, woodwork workshop must be properly organised and managed; in term of equipments, tools, materials, and workshop. To

obtained practical skills Nzetum (1993) stated that building and well equipped woodwork workshops are of paramount importance in the technical colleges because of the practical oriented nature of the programme. The purpose is to give training and impart necessary skills to the students. However, for the objectives to be achieved there must be well equipped workshop. Unfortunately, this is not the situation in which most of the technical colleges in the state are found, in fact most of them do not have adequate functional woodwork workshops, what they have are just glorified classroom. In a situation like this meaningful training cannot effectively take place. This constitutes a serious draw-back in development of technical colleges. If the educational sector is to achieve the expected objective, woodwork workshop must be provided to house the equipment and materials required for training and thus afford the students the opportunity to work with their hand. But in a situation where is not adequately provided no steady progress should be expected, rather the administrator, teachers and student will be placed in a sorry situation thereby living the school with a very bad image.

As noted by Aina, (1991) one of the major problem facing technical education is the inadequacy of technical workshop and equipment. In Kwara State, the situation is the same, lack of and poor training equipment constitutes a serious drawback to the development of technical education. However, this is blamed upon the expensive nature of these equipments and the lack of fund for maintenance. Though this is acknowledged, but the fact still remains that they are needed for the effective implementation of the Programme. Anything that is worth doing at all should be worth doing well. If these equipment are not provided the teacher will simply resort to theoretical teaching rather than practical. This will end up producing students without the required skills and knowledge for successfully living in the society.

The Administrator of Technical Colleges is supposed to perform the organisation of the resources available to him which include human and material resources, for the achievement of some predetermined objectives of the colleges. Over the years there has been a lot of controversy over both theories and techniques of management .But in recent times however, there has been the encouraging recognition of the fact that “no one theory or technique is applicable in all circumstances”.

In both principle and practice all administrator including those in Education perform seven management functions which includes, planning, organising, staffing, directing, co-ordinating, reporting, and budgeting. But the extent to which every Administrator performs each of the functions varies from situation to situation

To perform this important roles in National Development through contribution to human resources development, Vocational/Technical Education has to be efficient and effectively organised in terms of utilisation and management of facilities and equipment available for technical education.

Presently, large sum of money is being spent on technical education infrastructural facilities. A lot of errors are also being factored into these new facilities due to lack of adequate communication between technical education expert and the authority who usually form the habit of purchasing the equipment on their own just to satisfy their own financial gain, not only this a great diversity exist in the new curriculum and equipment that are available for use n the school workshop. These developments make it imperative that teachers in technical education should be familiar with the skills and management strategies necessary to plan new or improve on the

existing facilities, if we are looking forward to a technical education programme that will take us to the Promised Land.

In view of this, the researcher of this project decided to carryout research to evaluate the organisation and management of Technical Colleges woodwork workshop in Kwara State.

Statement of the Problem

The world prosperity and the future of developing countries most especially Nigeria depends essentially on Technical Education. 'This can only be achieved when the problem of organisation and management of Technical Colleges woodwork workshops are eliminated. It has been notice that students attitudes towards arrangement and management of wood work tools and machines when working in wood workshops in tertiary institution is not impressive and does not show that they were properly taught, management techniques and appropriate workshops arrangement when they were in secondary/technical schools. This attitude has contributed in the increase rate of workshop accident due to improper placement of wood machine, tools misplacement, lack of identification of wood work machine according to placement position for standard wood work workshop. Technical colleges are known with high standards of workshop management at secondary levels because of the technical and trade nature of the courses they offer. But today it is notice that these standards are plunged down due to inadequate supervision and following of standard workshop organization rules.

In addition to this, there are possible obstacle, related to the organisation and management of wood workshop in technical colleges in Kwara State. Based on these problems, there is a gap of information and research therefore researcher believes that there is need to evaluate the organization and management of wood workshop in technical Colleges in Kwara State.

Purpose of the Study

The purpose of this research is to find out:

1. The criteria for organization and management of woodwork workshop
2. The possible obstacles related to poor organization and management of Technical Colleges woodwork workshop.
3. The strategies of instruction employed by technical teacher for overcoming obstacles to effective organization and management of woodwork workshop in technical colleges.

Significance of the Study

It is aimed that the findings of this study will be beneficial to the teachers, the students and the management and organization of the school.

This research will assist education authorities in Kwara State to recognize the problem facing the Organization and Management of wood workshop in Technical colleges.

It also provides education planners and curriculum implementer's possible solution to some of the problems that they encounter in woodwork workshop management. Also the state of unemployment and technological underdevelopment will also be minimal when graduates are developed to be self- reliant and they suit the needs of the community.

This research will also serve as reference for other students who are interested in related studies on Organization and management of technical college woodwork workshop.

Scope of the study

In Kwara State there are four Technical colleges out of these, only three will be utilised for the research. They are Government Technical College Esie / Iludun, Government Technical College Erin-ile, and Government Technical College Ilorin. The reason for choosing the colleges is that, it has been in existence since 1974, hence they should be able to produce a range of fact on the failure and progress of woodwork workshop organisation and management, such old colleges should possess a variety of workshop, materials and experienced teacher. This research will be basically on woodwork, workshops for the above named schools.

Research Questions

The following research questions were drawn for the purpose of this study.

1. What are the criteria for organization and management of woodwork workshop?
2. What are the possible obstacle related to poor organization and management of technical colleges' woodwork workshop?
3. What strategies are employed by the technical teachers during instruction for overcoming obstacles to effective organization and management of woodwork workshop in technical college?

Hypotheses

The following hypotheses were tested at point 0.05 level of significance:

1. There is no significant difference between the mean response of teachers and students on the criteria for organization and management of woodwork workshop
2. There is no significant difference between the mean response of teachers and students on the possible obstacles related to poor organization and management of Technical colleges woodwork workshop.
3. There is no significant difference between the mean response of teachers and students on strategies are employed by the technical teachers during instruction for overcoming obstacles to effective organization and management of woodwork workshop in technical college

Delimitation

This research study is delimited to:

1. Government Technical College Esie/Iludun
2. Government Technical College Erin-ile
3. Government Technical College Ilorin

Limitation

The research could have covered the whole State if not because of the various Obstacles, such as time factors, financial constraint; the researcher will found it difficult to devote sufficient time for the research because of the on-going lectures which demand his regular attention. Financial constraint also compelled the research to limit the study to what it is, because the researcher

requires travelling outside the station which also cost a huge amount of money, for this purpose the researcher decided to limit the study within the available resources at hand.

CHAPTER II

REVIEW OF RELATED LITERATURE

Literature related to the study is reviewed under the following headings:

1. Development of Technical colleges in Nigeria
2. Organization of Technical colleges in Nigeria
3. Management of Technical colleges / Obstacles to Management
4. Essence of a woodwork, workshop in technical colleges and its effects on students performance
5. Workshop equipment and materials
6. Evaluation of Technical colleges in Nigeria
7. Summary of Related Reviewed Literature

Development of Technical Colleges in Nigeria

Technical education is generally as a late arrival in the curriculum of the world educational system. The 1969 curriculum conference in Lagos provided the opportunity for technical education expatriate, planners and industrialists to demonstrate resentment for and to separate the unfortunate emphasis on literary education and the abandonment of the apprenticeship system, the outcome of the conference was radical, a new national education policy (the 6-3-3-4 system) and revised in 1981, vocational and technical education has been absent in the Nigeria formal traditional secondary school, not until after the report of Ashby commission investment in

education(1960) that some serious thoughts of introducing vocational technical education in Nigeria technical schools was viewed with some interest . In the all Nigeria conference on curriculum development technical education experts were not represented. It was after the Nigeria civil war that the nation got her philosophy and objectives on her educational system. This was the birth of technical education and its development under National board for technical education.

One of the major defects in the Nigeria education system is the low priority accorded to technical education and vocational education. The origin of the problem in Nigeria started with the introduction of western education. The first western schooling brought to Nigeria was literary education and one civil rule was established, the expatriate administrators were graduates, most of them in art and so the literary tradition and the university degree has become intelligibly symbol of prestige in Nigeria by contrast, technology, agriculture and other practical subject. Technical education has always been relegated to the background in the country since the colonial era. The colonial administrators know that such type of education would lead to the country self –reliance and self- sufficiency and therefore avoided it. In this regard fafunwa, (1977) said that, the cost of running technical education have always been high in terms of capital and recurrent expenditure.

The absence of requisite infrastructure and adequate physical facilities made school authorities to shelve the idea of including technical education in the curriculum. It could be deduced from the above statement that technical education has suffered and is still suffering an obvious set back due inadequate facilities and manpower for the formulation of suitable policies. In view of this, Mukherjee, (1978) state that, inadequacies in the provision of technical equipment, fund and other amenities to technical colleges might leads to improper organization

and management of workshop. The colonial government in Nigeria was reluctant to liberally finance technical education in the colonies not only because of the inadequate finance, but because of the Victorian government *laissez fair* policy towards the colonies. Furthermore, Nduka (1964). Stated that the administration was particularly caution to introduce progress (colonial report 1908) so that fabric of the native society would not be civilized on the assumption that, technical education was expensive and like other social services, produced no immediate returns to balance the recurrent expenditure from the government and therefore Nigeria could not be provided as much with the type of education it could afford.

Government control vocational/technical education started being effective with the establishment of trade centre in 1947. The federal government now acts as a co-ordinator as well as a source of expert and financial assistance of all technical institution in the country, (callway, 1968). The government accomplishes functions through a number of bodies, including the national advisory council on technical education and industrial training, the industrial training fund (I.T.F.) the national board for technical education, the national technical teachers college and national board for business and technical education (NABTEB).

In conclusion, technical education is greatly needed in conserving and developing the nation resources, and also to help the Nigeria youth as well as adults acquire technical training in relevant field.

Organization of Technical colleges in Nigeria

Organization of education in any country is concern with two main features such as the structure of the educational system and the nature of the administration of the system self (1975) sees organization as a relationship between individual and institution in a society which

make for stability and which are based on acceptable normative patterns of behaviours. In this regard Nwazor, (1984) stated that, in every educational system, the structure of formal education is made up of three levels, the primary, the secondary and the tertiary or higher education. The secondary level of educational structure including general secondary schools, technical and vocational secondary institutions, comprehensive secondary school and teacher training institutions at the training level. The nature of educational administration in Nigeria is shared by various levels of government and their agencies such as federal government agencies in education, state ministry of education and the local government education agencies, having different level of operation at each levels of government. Wenreih, (1980) observed that, technical institution are complex social organization that would operate more effectively that if persons in managerial role could create conducive atmosphere in which the goals of the organizations and the needs of the members can be satisfied simultaneously. On his contribution, silvius and curry, (1971) maintained that students adopt organization pattern of their choice with the teachers role been purely advisory. They further expressed that the pattern should be like real occupational organization in which each group of students should be allowed a chance to play available roles in his organization. Osuala (1987) pointed out that, all technical education institutions were government establishment from the beginning and that they were controlled and administered by the government until in the late 1950s that the inclusion and the contribution of industrial and commercial firms sponsored students in government institution which income fees were limited too few student on sponsorship by private firms.

Response to the poor organization of technical education, Ashby, (1960) commission reported that a modest effort should be made to establish liaison and to maintain close co-ordination between technical colleges, business and industry in which at the local level

institution and trade centre were guided by the local authorities and voluntary agencies with the co-operation of the ministries of education. At the national level, the federal advisory board on technical education and industrial training insured co-operation with the ministry of education, public corporations, industry and voluntary agencies in adjusting curriculum to the country's man power needs.

In conclusion, post independence also brought about external agencies on the basis of agreement which they enter into with the Nigerian government to provide her with funds for educational expansion and operation. Supply of teaching and administrative staff and general services rendered.

Management of Technical colleges / Obstacles to Management

Management is very important in any organizational development. Nwachukwu, (1989) defined management as the co-ordination of all resources of an organization through the process planning, organizing, directing and controlling. The management of human and material resources involves directing, planning, organizing and controlling for one to achieve the maximum level of attainment in his organization. Administration and management are normally used interchangeable though in education we mostly use administration more than the world management but however they all mean the same.

One important aspect of the theory of administration is the process a cycle action through which administrative tasks are accomplished, Nwuzor, (1984) he further states that the administrative process has component such as decision making, planning, organizing, communicating, influencing co-ordinating and evaluating, the choice of which lies in the fact

that it contains all that may be necessary in the administrative process for effective control and administration of education

Analyzing the above management component, Simeon (1957) deduced that, the management in the educational system, school board, the ministry of education or even the government from time to time will have to make major or minor decisions that would make for effective utilization of the resources in the educational system. He further indicated that every action taken is as a result of decision made. A wrong decision may imply very serious and unpleasant consequences for the organization contributing to the effectiveness of administration of education. Dror, (1970) defines planning as an administrative process of preparing a set of decisions for action in the future directed at achieving goals by optimal means. Supporting the definition Nwuzor (1974) pointed out that for an effective administration of educational process good plan should be observed such that.

1. The problem must be recognized, identified and limited, and the goals to be attained clearly defined.
2. The problem must be analyzed and evaluated and ensure that the priorities are taken in order. Necessary information and data must be collected and analyzed.
3. Choice of the alternatives must be made in terms of cost considered against resources available for optimum realization of the goals and aim. According to Zakari (1987) No organization can carry out its management function effectively without adequate financial resources. Funding is a management process by which scarce resources are allocated to the appropriate skills.

Umejiawu, (1985)also observed that, equipment and material in teaching help to provide incentive to lean and these makes teaching and learning interesting and comparatively easy. In view of the above, government invested a lot of money in the importation of workshop equipment as a result of motions passed in 1982 during one of the national council of education meeting held in jos, in which a request was made to the federal government to assist the state government with loans to purchased the equipment, as reported in the news- watch magazine of June 13, 1988 that, in 1982,the state, had signed a loan agreement with the federal government to be deducted at source from their statutory allocation to purchased their equipment. As a result the ministry of education spent about twenty one thousand seven hundred and eight three million of naira to import materials and equipment which is distributed to the state, but unfortunately, these equipment cannot be properly utilized because of the inadequate organization and management of the technical colleges workshops

The problems of the technical college management are many and they arise from: inadequate supply of instructional materials; lack of adequate motivation, poor professional, personal and public Image; lack of well equipped library for research workshop; frequent curriculum changes, lack of well articulated In-service education programme for technical teachers, insufficient university admission for training of technical teachers etc. However, not all the problems will be examined because of limited space and time Nevertheless some of the problems are :

1. Inadequate Supply of Technical Workshop: Most technical colleges cannot boast of adequate functional workshops even when the teachers may be ready to teach the students, in spite of poor remuneration. There are some cases where technical equipment were supplied but

no workshop to install the equipment This certainly led to frustration on the part of the technical college teachers.

2. Inadequate Supply of Instructional Materials: Instructional materials and consumables in technical colleges are very expensive and the federal and state governments have not been providing funds to address this critical area. All we are getting is just lip service to technical education. Even when the teachers are ready to improvise instructional materials, the little amount of fund needed could still not be received from the college authorities

3. Lack of Adequate Motivation: Technical college administrators are subjected to deplorable working conditions. Hardly are they found in furnished offices, instead they are put in large staff rooms, a times with students type of desks and chairs, whereas their counterparts in other sectors could have executive air-condition offices, private secretary or even messengers and reserved packing spaces, and could belong to prestigious clubs and association, be entitled to tree lunch etc. these help to boast their ego as they are looked upon as being successful. Therefore, if education ate the technical college level will be restored to acceptable level. Hygiene-motivator principles must be applied in the administration for the purpose of getting teachers to have satisfaction from their job. (Ariwerikuma, 1986).

4. Poor Professional, Personal and Public Image: While the general attitudes of the public towards technical education have been found to be negative, the administrators themselves act and talk that way instead of reorienting and correcting the misconceptions that the public have about technical education. The general public must be made to recognize that technical educations are the backbone of any nation for technological development

5. Lack of Well Equipped Library for Research Work/Project: Technical College Teachers and administrators that are ready to carry out some research work/projects cannot do this

successfully because the libraries are not stocked with up-to-date textbooks and periodicals in their area of specialization. Where the textbooks are available locally, the teachers and administrators could not afford them because of meager salaries. Therefore, the technical teachers and administrators may - not be motivated to embark on any project that will be useful to the college and society at large.

6. Frequent Curriculum Change in Technical Colleges: With the establishment of National Business and Technical Education. Board (NABTEB) few years ago all technical colleges are mandated to use the curriculum developed by NABTEB's curriculum which differs from the former West African Examinations Council (WAEC) technical syllabus. The curriculum is very comprehensive and has more courses. This according to Ekpenyong (1995) means that the technical college must be versatile in there areas and in the general and science education courses.

7. Lack of Well-Articulated In-services Education Programme for Technical Teachers and Administrators : It has been observed that some of the technical college teachers and administrators do not have any teaching qualification and no provision has been made for them by the employers in this area to serve as incentives for these teachers. They should be encouraged to attend some vocational teacher education programme during long vocations to equip them as professional teachers and administrators and not cheaters.

8. In-sufficient University Admission for Training of Technical College Teachers: University admission either on full-time or part-time basis for technical teachers and administrators at bachelor, masters and doctorate levels are not sufficient. There are only few universities in Nigeria that offer technical education and thus admitting only a few selected out of a great number that apply each year. The technical college teacher with all their predicaments

play vital role in the overall development of this nation as they continue to strive harder with available resources to mould Nigeria's tomorrow technologically base and development by imparting and training the Nigerian child to be self employed, self reliant, and also provide the technological background for students that would want to become technologists or engineers for the good of Nigeria.

Technical college teachers and administrator in Nigeria encounter several problems in their teaching and administration job. These problems range from inadequate supply of infrastructural materials, poor professional personal and public image. Lack of teacher and administrator motivation, lack of well articulated in-service education programmes for technical teachers and administrators to insufficient university admission. The technical college teachers and administrators can now demonstrate a state of pride and job satisfaction with the Mandatory Continuing Profession Development (MCPD), Professional Diploma in Education (PDE) and Technical Teachers Training Programme (TTTP) put in place to brighten their future and elevate them to higher heights of the profession. In conclusion in any good administration of educational process, the control component function is important. Control refers to the monitoring of performance to check activity undertaken in order to ensure that resources expended correspond to those that have been authorized. Infant, the system is primary concern with the successful implementation of plans and involves actions to check deviations from plans. Tukura, (1998) stated that, economic constrains determinant of the quality and quality of personnel and material resources and their conditions which is critical for efficient and effective management for good result from technical and vocational institutions. He maintain that constraints in the management of technical and vocational schools centers to the case or difficulties' in recruiting and maintaining staff. Procurement and maintain of equipment and facilities. Consequently, Tukura,

(1998) observed that the poor situation of the college is manifest of their high rate of failure of graduates in technical examination and their inability to find employment after graduation. On the same vain, Nneji, (1995) and so folahan, (1988) attributed the inability of the programmed to be more theory than practical nature by their offerings.

In summery, olalekan, (1999) skill maintain his contribution that, only good maintenance of our facilities that their life span is prolonged and efficiency is enhanced to a maximum capacity, for functional technology education, good management is desired.

Essence of a Woodwork, Workshop in Technical Colleges and it effects on students performance

Learning by doing which lead to the acquisition of manipulative skill is the major emphasis on the technical college curriculum, therefore technical colleges wood work, work shop should be giving special attentions to year technical education for future, particularly they should take a fresh look of what must be done to make their contribution more meaningful and effective, similarly according to Nzelum, (1993) building and well equipped wood work, workshop are of importance in the technical colleges because of the practical oriented nature of the program which suppose to give training and impart the necessary skills to the student, However for the objectives to be achieved, there must be well equipped workshop. Unfortunately this is not situation in most of the technical college in the state. Most of them do not have adequate functional wood work, workshop rather what they have is just a glorified classroom.

In conclusion, technical college wood work, workshop is greatly needed in conserving and developing the nation resources and also to give training and impart that necessary skills

leading to the production of craftsmen, upholsterers, carpenters and other skilled personnel who will be enterprising and self-reliance.

Workshop Equipment and Materials

It is an obvious truth that the realization of the objectives of technical education depend to a large extent on the availability of equipments and materials for teaching. Equipment and tools are important material needed for the teaching and learning of practical work in wood work, workshop. The success of the curriculum is not lying at the feet of the teachers only, but to a certain extent on the availability of conducive environment in form of workshops, and equipment. But as noted by Aina, (1991) one of the major problem facing technical education in the federation is the inadequacy of technical equipment and material for practical works, in Kwara state, the situations is the same, lack of materials and poor training equipment are constituting a serious drawback to the development of technical education. However, this is blamed upon the expensive nature of this equipment and the lack of fund for maintenance. Through this is acknowledged but the fact still remains that they are needed for the effective implementation of the program. Anything that is worth doing at all should be worth doing well. If this equipment are not provided, the teacher will simply resort to theoretical teaching rather than practical. In his own contribution Akpan, (1981) stated that, technical teacher operate best in well equipped workshop, he also said that students learn best in a well equipped workshop similarly Onyikee, (1975) emphasized that technical teachers should be competent in handling machine, equipment and tools effectively in the use of demonstration, ability to organize practical work must be resourceful. This will end up producing students without the required skills and knowledge for successfully living in the society, thus defeating the aim of the programmed.

The acquisition of manipulative skill requires efficient instructional methods such as demonstration and project; it is then obvious that the program can not be successfully carried out without the workshop equipment and material. Eden, (1982) stated that, adequate equipment and material are required to teach the students.

Evaluation of Technical Colleges in Nigeria

Technical colleges before now known as introductory technology was structured to assist learners to develop interest in technology. The aim is that at the end of course, technological appreciation would have been attained and solid foundation laid for students would have the opportunity of entering into a vocation of their choice. This is in consonance with the statement in the National policy of education (2004). Amongst others, it states that in order to reduce ignorance about technology, help lay a solid foundation for national development and for increase in practical skills and management acquisition, the course of woodwork technology is to be offered in technical colleges.

The management of woodwork workshop should be such that at the end of the programme, the products would appreciate technology and practice it. The Implication of management of woodwork workshop practice is that more than anything and anywhere else, the management of wood work programme should be directed toward achieving alteration of human conception of literal education towards technology, which is the new world orientation due to the indent changes in technolgy. This can take place in no other place than in the effectively managed and organised workshops. This assertion should be acknowledged according to Ezeocha (1990) as he stated that, “it must be understood that the workshop management is not just a mechanical chore involving only material things and inanimate systems, it is much concerned with the people

involved and influenced by this aspect of management as things, forms and systems”. If the management involves human being as noted by Ezeocha, it means that everybody involved must contribute to its success and the management process and organization must guarantee safety and healthy environment. Increase in practical skills acquisition which is usually attained when workshop facilities are well managed, (Nwachukwu, 2001). There is no human endeavour that does not require proper management for its better functioning. Since management is one of the most important activities that permeate all organizations. All types of organisations whether profit or nonprofit making require good management to function effectively. With better management technique, wood work technology teachers will utilize workshop facilities in more beneficial ways.

Techniques for evaluating technical colleges in Nigeria

Evaluation is described as “the systematic process of judging the worth, desirability, effectiveness or adequacy of something according to definite criteria and purpose (Haris, 1968 in Okor, 1999). Nwachukwu (2001), also defined evaluation as the process of determining how much learning the learner in an educational setting has acquired. In general terms, it is the process of reaching decisions. The major function of evaluation is to determine the level of implementation. The concept of this evaluation is implicit in the teaching-learning process. At all levels of education today, the keyword which everybody is looking for is accountability. To this end serious demands are always been made on the part of the teacher intentions in terms of specific objectives, so that students’ learning outcome can be useful. In this way schools in Nigeria can evaluate their teachers in terms of their students’ performance. This measure is likely to force these teachers to adhere to the continuous assessment process recommended in technical colleges in Nigeria. Evaluation as a management function is closely related to planning.

Evaluation in this context will not be perceived as a measurement of students' success alone but also of teaching effectiveness and efficiency in using resources. Evaluation of this nature is necessary in the present technical colleges in Nigeria, if education is to keep pace with time.

According to Nwachukwu (2001), what the teacher really needs to find out following the review of student's perspective in whether:

- a) The materials required for practice in the wood work workshop were sufficiently supplied and then the quantity used for work.
- b) There is any particular step in the procedure for doing the work that is particularly difficult and hazardous for students during the working experience.
- c) There are tools or equipment that were particularly difficult to operate or did not function in the workshop.
- d) There are certain aspects of the work experience that should require more time to be completed.
- e) The information collected after the work experience was clear and useful to the students.
- f) The students can organize and analyze the information so collected.
- g) There are some resources of misinformation in the work experience that has been completed.
- h) 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 the lessons. When these students are in individual workshop, 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.

When students in the wood work 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 in the programme of the school, as well as determining what further activities these students can accomplish.

Conclusion

It is clear that, with the identified workshop management techniques, graduates of technical colleges would be better equipped with skills in their chosen trades/careers for self employment. Wood work teachers jobs might be easier and more effective since the information provided by the study would have identified areas of deficiencies in their workshop practices.

It is now established for instance that the general public would benefit immensely from the outcomes of the study as the self employed graduate through improved teaching resulting from appropriate workshop management techniques producing articles and services for the consumption of the citizens.

Summary of Related Literature

Organization of technical college in any country is concern with two main features such as the structure of the educational system and the nature of the administration of the system. Nwachukwu (1975) sees organization as a relationship between individuals and institutions in a society which made for stability and which are based on acceptable normative patterns of behavior, no organization can meet its managerial functions effectively without adequate financial resources, finding is a management process by which scarce resources are allocated among competing demands with an educational organization (Zakiri, 1987). Management is very important in any organization development. The management of human and material resources involves directing, planning, organizing, and controlling for one to achieve the maximum level of attainment in his organization however obstacles to management are inadequate supply of instructional materials; lack of adequate motivation, poor professional, personal and public image; lack of well equipped library for research workshop; frequent curriculum changes, lack of well articulated in-service education programme for technical teachers, insufficient university admission for training of technical teachers. We can't be talking about organization and management without knowing the meaning of workshop.

Workshop is a place where teaching aids are made, a store where teaching aids are kept and displayed a demonstration room, a classroom for regular lesson and a recreation where some practical game can be played. The new Webster's dictionary (2010) defined workshop as a room or a building in which productive work or manufacture on a small scale is carried out with the help of equipment and material for effective production. Equipment and tools are important material needed for the teaching and learning of practical work in wood work, workshop. Which is defined by Oxford Dictionary (2010) as the things that are needed for a particular purpose or

activities .The success of the curriculum is not lying at the feet of the teachers only, but to a certain extent on the availability of conducive environment in form of workshops, and equipment. All of these can be achieved with the existence of technical colleges in country. Therefore the development of technical colleges in Nigeria as a late arrival in the curriculum of the educational system, which was pioneered by the 1969 curriculum conference in Lagos but the outcome of the conference was radical, . It was after the Nigeria civil war that the nation got her philosophy and objectives on her educational system. So a new national education policy (the 6-3-3-4 system) and revised in 1981.This was the birth of technical education and its development under National board for technical education.

CHAPTER III

METHODOLOGY

The purpose of this chapter is to present the design and procedure followed in obtaining the necessary data for this study. it consist of the step by step outline of what the researcher intend to do to complete the work without difficulty. It focused on research design of the study, Area of the study, population, Sample and Sampling Techniques, Instrument of data collection, Validation of the instrument, Administration of the instrument, method of data analysis and Decision rule.

Design of the Study

This study is the survey research design which typically employs questionnaires to help in determining the opinion of the respondents. This study is conducted in kwara state to evaluate the organization and management of technical college's wood work, work shop This is because according to Olaitan (1999) survey research design is a descriptive study in which the entire population or representative sample of the entire population is studied by collecting and analyzing data from the group through the use of questionnaire

Area of the Study

The research study was carried out in three of the technical colleges in Kwara State.

Population of the Study

The population of this study comprises of teachers and students of Government technical college, Esie/Iludun, Erin-ile and Ilorin. The population consists of sixty (72) students and thirty (34) teachers of Government technical college.

Table showing the population of the study

S/N	Technical colleges	Students	Teachers
1	Government Technical College Esie/Iludun	23	12
2	Government Technical College Erin-ile	24	10
3	Government Technical College Ilorin	25	12
TOTAL		72	34

Sample/ Sampling Technique

A sample is a limited number of elements selected from a population which is the representative of that population. In view of the difficulties that may otherwise be encountered in studying the entire population due to the limitation of time and fund, the researcher though, it proper to use a representative sample of the population. A random sampling technique was therefore used in the selection of the subjects to give every member of the study population an equal chance of being selected sixty (60) for the students and thirty (30) for teachers were used in this study.

Table showing the sample techniques of the study

S/N	Technical colleges	Students	Teachers
1	Government Technical College Esie/Iludun	18	10
2	Government Technical College Erin-ile	20	8
3	Government Technical College Ilorin	22	12
TOTAL		60	30

Instrument for Data Collection

The instrument used for data collection was questionnaire and it contained twenty-eight (28) items for both teachers and students. The questionnaire was administered personally by the researcher to all the selected teachers and students in the school involved in the study, and were collected back immediately.

The questionnaire is the main instrument used by the researcher for this study. The questionnaire is divided into two (2) sections A, and B.

SECTION A: A deals with personal data such as name of colleges; sex, etc.

SECTION B: Comprises of the teachers and students questionnaires. In this questionnaire, respondents were asked to indicate by ticking () against the most appropriate options in the space provided. The four point scale items were developed using,

Administration of the Instrument

The researcher went to the selected technical colleges in Kwara State to administer the questionnaire personally and with help of a research assistant in each school to teacher and students. The questionnaire was also collected by the researcher and through assistant from the respondent.

Validation of the Instruments

The instrument for the collection of data was designed by the researcher and also validated by three lecturers in the Department, where two of the lecturers are from Woodwork option and the other one from the department of Industrial and Technology Education Department, all at the Federal University of Technology (FUT), Minna. Their suggestions and corrections were used to produce the final draft of the instrument that was used for data collection.

Method of the Data Analysis

Data collection was analyzed by using mean, standard deviation and t-test. Mean was used to answer the research question while t-test was used to test the null hypotheses at a 0.05 level of significance.

The four-point rating scale was used to analyze the data as highlighted below:-

Strongly Agree (S A)=4 points

Agreed (A) =3 points

Disagree (D)=2 points

Strongly disagree (S D)=1 point

Accepted level of favorable rated item was

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

$$4 \quad 4$$

DECISION RULE

To determine the acceptance level, the mean score of 2.50 and above on a four point rating scale was used as a cut –off point and 0.05 level of significance. Any item that attracts up to 2.50 and above was considered agreed and from 2.49 and below as disagreed and rejected

CHAPTER IV

PRESENTATION AND ANALYSIS OF DATA

This chapter deals with the presentation of the analysis of data with respect to the research questions asked and the hypothesis formulated for this study. The result of data analysis for the research questions were presented first followed by those of the hypothesis tested for the study.

RESEARCH QUESTION 1

What are the criteria for organization and management of woodwork workshop?

Data needed to answer this question are in table 1.

TABLE 1

Mean scores of the respondent in relation to the criteria for organization and management of woodwork workshop.

$$N_1 = 30 \quad N_2 = 60$$

S/N	ITEMS	X ₁	X ₂	X _t	REMARKS
1	There is proper maintenance of wood work, workshop equipment by the school authority	1.90	2.81	2.36	Disagreed
2	The tools and material provide are in line with the NABTEB/NBTE Minimum standard	1.83	2.85	2.34	Disagreed
3	Are the machine in the workshop functioning	2.96	2.35	2.66	Agreed
4	There is a unit workshop for student in your school.	3.43	3.50	3.47	Agreed
5	There is technical supporting staff in workshop as stipulated by	2.23	2.35	2.29	Disagreed

	the curriculum				
6	The facilities used for the training are adequate	2.03	2.08	2.06	Disagreed

- KEY:
- X_1 = Mean score of Teachers.
 - X_2 = mean score of Students.
 - X_t = average mean score of both Teachers and students.
 - N_1 = Number of teachers
 - N_2 = Number of students

The table 1 above revealed that both groups of respondent disagreed with items 1, 2, 5, and 6 with the mean score ranging from 2.06 – 2.36. While both groups agreed only with item 3 and 5 with means score of 2.66 and 3.47 respectively.

RESEARCH QUESTIONS 2

What are the possible obstacle related to poor organization and management of technical colleges' woodwork workshop?

TABLE 2: Mean scores of the respondent in relation to the possible obstacles related to poor Organization and management of Technical Colleges wood work, workshop.

$$N_1 = 30 \quad N_2 = 60$$

S/N	ITEMS	X_1	X_2	X_t	REMARKS
1.	unqualified technical supporting staff constitute to the poor management and organization of the workshop	3.26	2.76	3.01	Agreed
2.	Funds are not made available by the Administrator for purchasing consumable tools and material.	3.50	3.20	3.35	Agreed
3.	Inadequate monitoring of material resources Utilization.	3.23	3.23	3.23	Agreed
4.	There is no source of power supply in the school for effectively operate the workshop equipment.	2.20	1.95	2.08	Disagreed
5.	There is an interrupting power supply in the school workshop	2.90	2.61	2.76	Agreed
6.	Adequate and qualified support staff are available in all department	2.96	1.82	2.39	Disagreed
7.	There is inadequate supply of technical equipment	2.96	2.80	2.88	Agreed

KEY: X_1 = Mean score of Teachers.

X_2 = mean score of Students.

X_t = average mean score of both Teachers and students

N_1 = Number of teachers

N_2 = Number of students

The table 2 above revealed that both groups of respondent agreed with items 1,2,3,5,and 7 with the mean score ranging from 2.76 – 3.35 While both groups disagreed only with item 4 and 6 with means score of 2.08 and 2.39 respectively.

RESEARCH QUESTION 3

What strategies are employed by the technical teachers during instruction for overcoming obstacles to effective organization and management of woodwork workshop in technical college?

TABLE 3:

Mean scores of the respondent in relation to the strategies of instruction employed by the technical teacher for effective organization and management of wood work, workshop in technical colleges.

$$N_1 = 30 \quad N_2 = 60$$

S/N	ITEMS	X ₁	X ₂	X	REMARK
1.	The teachers demonstrate the concept to be taught by example(s)	2.96	2.46	2.71	Agreed
2.	The teachers gives adequate and clear explanation to concept.	2.96	2.83	2.90	Agreed
3.	The teachers encourages the students to practicalized concept taught in the workshop	2.70	2.30	2.50	Agreed
4.	The teachers assess the students while working on the machine.	2.60	2.81	2.71	Agreed
5.	The teachers gave students tools/material for practical work.	2.06	2.41	2.24	Disagreed
6.	The teacher allocate adequate time to practical period.	2.96	2.63	2.80	Agreed
7.	Training and development of unqualified support staff.	2.55	2.66	2.61	Agreed

8.	Administrator source for fund from other sources for purchasing tools and material	2.50	3.00	2.75	Agreed
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- KEY:
- X_1 = Mean score of Teachers.
 - X_2 = mean score of Students.
 - X_t = average mean score of both Teachers and students
 - N_1 = Number of teachers
 - N_2 = Number of students

The table 3 above revealed that both groups of respondent agreed with all items with the mean score ranging from 2.50. – 2.90 except item 5 with mean score of 2.24

TABLE 4 HYPOTHESIS ONE

The scores, standard Deviation and t – test of the criteria for organization and management of woodwork, workshop.

(N = 90)

	N	X	SD	Df	Tcal	tint	Remark
Trs	30	2.39	0.59	88	0.084	1.98	NS
Stds	60	2.65	0.46				

Table 4: calculate t-valve (0.084) does not equal or exceed the t-critical valve (1.98) necessary for the null hypothesis at 0.05 level for 88 degrees of freedom; the hypothesis is not rejected. Hence there is no significant difference between the mean response of teacher and students

toward whether the present condition of Technical colleges organization and management of wood work, workshop in line with the school curriculum.

TABLE 5 HYPOTHESIS TWO

The Scores, standard Deviation and t – test of the possible obstacle related to Organization and management of Technical Colleges wood work, workshop.

(N = 90)

	N	X	SD	Df	Tcal	tint	Remark
Trs	30	3.01	0.39	88	0.27	1.98	NS
Stds	60	2.45	0.46				

table 5 calculated t- value (0.27) does not equal or exceed the t-critical value (1.98) necessary for rejection of the null hypothesis at 0.05 level for 88 degrees for freedom the hypothesis is accepted, hence there is no significant differences between the mean response of the teachers and students towards the possible obstacles related to organization and management of technical colleges wood work, workshop.

TABLE 6 HYPOTHESIS THREE

The scores, standards deviation and t-test of the strategies of instruction employed by the technical teachers for effective organization and management of wood work, workshop in technical colleges.

(N=90)

	N	X	SD	Df	Tcal	tint	Remark
Trs	30	2.70	0.32	88	0.12	1.98	NS
Stds	60	2.57	0.20				

Table 6, also revealed calculated t-value (0.12) does not equal or exceed the t-critical value (1.98) necessary for rejection of the null hypothesis at 0.05 level for 88 degrees of freedom the hypothesis is accepted, hence there is no significant between the teacher and students towards the strategies of instruction employed the technical teachers for effective organization and management of wood work, workshop in technical colleges.

Findings

Base on the data collected and analyzed, the following findings were made according to the research questions raised for the study.

- i) Are the machine in the workshop functioning
- ii) There is a unit workshop for student in your school.
- iii) unqualified technical supporting staff constitute to the poor management and organization of the workshop
- iv) Funds are not made available by the Administrator for purchasing consumable tools and material.
- v) Inadequate monitoring of material resources utilization
- vi) There is an interrupting power supply in the school workshop
- vii) There is inadequate supply of technical equipment

- viii) The teachers demonstrate the concept to be taught by example(s)
- ix) The teacher gives adequate and clear explanation to concept.
- x) The teachers encourages the students to practicalized concept taught in the workshop
- xi) The teachers assess the students while working on the machine.
- xii) Administrator source for fund from other sources for purchasing tools and material

Discussions of findings

From the research questions, the findings are displayed in the table 1-3. Some items were agreed while some were disagreed about the evaluation of organization and management of wood workshop in technical colleges.

The findings of this study revealed the criteria for organization and management of woodwork, workshop. The analysis of result show that, many problems have been identified form the study by the researcher and how Best the organization and management of technical college wood work, workshop can be improved from the present to the future use for the programme in school setting. According to Aina (1991) one of the major problems facing technical education in the federation is improper maintenance of workshop equipment and tools. In support of this view Nzelum, (1993) state that, well equipped workshop are important in the technical colleges because of the practical oriented of the programme. According to the research findings, there is no proper maintenance of the workshop equipment by the school authority. Most of the colleges do not have adequate functional workshop rather what they have are just glorified classroom,

therefore for the objective to be achieved, there must be a well equipped and functioning workshop by the school Authority in the state.

The findings of research question revealed the possible obstacle related to organization and management of technical colleges wood work, workshop, many possible obstacles have been identified from the study by the researcher related to organization and management of technical colleges wood work, workshop. Fund are not made available by the administration for purchasing consumable tools and materials are there is an interrupting power supply in the school workshop, according to Zarkari (1987) No organization can carry out its managerial function effectively without adequate financial resources.

Researcher also observed that, well equipped workshop equipment machine, tools and materials in teaching help to provide incentive to learn and makes teaching and learning interesting and comparatively easy.

The finding of research question three revealed the strategies of instruction employed by the technical teachers for effective organization and management of wood work, workshop in technical colleges, according to the researcher finding , the teachers should improve in their strategies employed in the workshop by example (s) and gives adequate and clear explanation to the concept and asses the student when Working on the machine according to the view of Onyike, (1975) emphasized that technical teacher should be competent in handling machine, equipment and tools effectively in the use of demonstration ability to organize practical work, must be resourceful, this end up producing students without the required skills and knowledge for successful living in the society

CHAPTER V

SUMMARY OF THE STUDY

Summary

The main purpose of this study is to evaluate the organization and management of wood workshop in technical colleges, the criteria for organization and management of woodwork, workshop, the possible obstacle related to organization and management of technical colleges woodwork, workshop, the extent to which organization and management of technical colleges woodwork, the strategies of instruction employed by the technical teachers for effective organization and management of woodwork, workshop in technical colleges.

Related literature were reviewed in the following heading, the development of technical colleges in Nigeria; organization of technical colleges in Nigeria: Management of technical college/obstacles to management; essence of wood work, workshop in technical colleges and it effects on students performance: workshop equipment and materials: evaluation of technical colleges in Nigeria.

A questionnaire containing twenty-eight items was used to investigate evaluation of the organization and management of technical college woodwork, workshop. Four research questions were drawn, four hypotheses were formulated and statistical tools used for the analysis of result are mean, standard deviation and t-test.

Based on the findings of the study; it was found among others that, there is no proper maintenance of the workshop equipment and tools by the school authority; most of the technical colleges woodwork, workshop do not have adequate functional workshop and fund are not made

available by the administration for preparing and purchasing consumable tools and materials and appropriate recommendation were made.

Implication of the study

The findings of the study have implications in criteria for organization and management of wood workshop.

The findings of the study regarding the criteria for organization and management of wood workshop shows that proper maintenance of woodwork equipment by the school authority, tools provided are in line with the NABTEB/NBTE, minimum standard, technical supporting staff in workshop as stipulated by the curriculum, facilities used for the training are adequate was disagreed as the present conditions. The implication of this is that if these conditions are not being taking care of, the graduate of technical colleges will not be able to perform practical tasks in their various fields of study or job clusters. Another implication is that if the students are not being acquitted with on the job skills they will not be self reliant

Another implication of the study about the strategies of instruction employed by the technical teachers for effective organization and management of wood work, workshop in technical college shows that teachers encourage the students to practicalized concept taught in the workshop, teacher allocated adequate time to practical periods, Training and development of unqualified support staff, the teacher assesses students while working on the machine, Administrator source for fund from other sources for purchasing tools and material. If these strategies are put into consideration our technical colleges teachers will be proud and confident in their students.

Conclusion

Based on the finding of this study, it was found that there is need to improve the workshop condition to meet the new educational policy, a lot of problem which affect the organization and management of wood workshop in technical colleges have been identified during the literature review (chapter two) and the data analyses (chapter four) through responses from the people involved in the study, therefore proper attention should be made that technical colleges workshop should meet the requirement of the education system as one of the objectives is to produce individual to fit in to modern society.

Recommendation

The following recommendations are made based on findings of the study:-

1. The state government should provide adequate supply of equipment and materials to technical colleges' workshop to achieved the desired results for effective teaching and learning.
2. The state government should make funds available to the school management for the maintenance of broken down tools and machine and for purchasing necessary consumable equipment, tools and materials.
3. Adequate technical woodwork, workshop should be provided for the school to house all the equipment, machine and tools for teaching and learning

Suggestion for Further Research

The following of the suggestion were made for further research

- 1) The extent which organization and management of technical colleges woodwork workshop affect the student performance
- 2) The obstacle in the organization and management of technical colleges woodwork workshop

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APPENDIX B

**FEDERAL UNIVERSITY OF TECHNOLOGY MINNA SCHOOL OF SCIENCE AND
SCIENCE EDUCATION DEPARTMENT OF INDUSTRIAL AND TECHNOLOGY
EDUCATION**

TEACHERS /STUDENTS QUESTIONNAIRE SECTION A

INSTRUCTION: this checklist is just a sample of your opinion about the organization and management of technical college wood work, work shop, kindly tick () in the response you think is the most appropriate to each items.

PART I

NAME OF SCHOOL

STATUS

Teachers ()

Student ()

Discipline

The code notations are as follows

Strongly Agree S .A

Agree A.

Disagree..... D.

Strongly agree.....S.D.

PART II

SECTION B

A. What are the criteria for organization and management of wood work, workshop?

S/N	ITEMS	SA	A	D	SD
1	There is proper maintenance of wood work equipment by the school authority.				
2	The tools provided are in line with the NABTEB/NBTE minimum standard				
3	Are the machines in the workshop functioning?				
4	There is a unit workshop for student in your school.				
5	There is a technical supporting staff in workshop as stipulated by the curriculum				
6	The facilities used for the training are adequate.				

B. What are the possible obstacle related to poor organization and management of technical college’s wood workshop?

S/N	ITEMS	SA	A	D	SD
1	Unqualified technical supporting staff constitute to the poor				

	management and organization of the workshop.				
2	Funds are not made available by the administrator for purchasing consumable tools and materials.				
3	Inadequate monitoring of materials resources utilization.				
4	There is no source of power in the school for effectively operate the workshop equipment				
5	There is an interrupting power supply in the school workshop.				
6	Adequate and qualified support staffs are available in all departments.				
7	There is inadequate supply of technical equipment				

C. What strategies are employed by the technical teachers during instruction for overcoming obstacles to effective organization and management of wood work, workshop in technical college?

S/N	ITEMS	SA	A	D	SD
1	The teachers demonstrate the concept to be taught by example(s).				
2	The teachers encourage the students to practicalized concept taught in the workshop.				
3	The teacher assesses students while working on the machine.				

4	The teacher gave students tools /materials for practical work.				
5	The teacher allocated adequate time to practical periods.				
6	The teacher gives adequate and clear explanation to concept.				
7	Training and development of unqualified support staff				
8	Administrator source for fund from other sources for purchasing tools and material				

APPENDIX C

SATNDARD DEVIATION

TEACHERS ATITUDE (\bar{X}) = 2.39

X	$X - \bar{X}$	$(X - \bar{X})^2 = X$
1.90	-0.43	0.2401
1.83	- 0.56	0.3136
2.96	0.57	0.3249
3.43	1.04	1.0816
	- 0.16	0.0256
2.23	0.36	0.1296
2.03		

$$\sum x^2 = 1154$$

$$N = 6.$$

$$SD = \sqrt{\sum x^2 / N}$$

$$= \sqrt{0.3525}$$

$$= 0.59$$

STUNDENTS ATTITUDE (\bar{X}) = 2.65.

X	$X - \bar{X}$	$(X - \bar{X})^2 = X$
-----	---------------	-----------------------

2.81	0.16	0.0256
2.85	0.20	0.0400
2.35	0.30	0.0900
3.50	0.85	0.7225
2.35	0.30	0.0900
2.08	0.57	0.3249

$$\sum x^2 = 1.294$$

$$N = 6$$

$$SD = \sqrt{\sum X^2 / N}$$

$$= \sqrt{1.294/6}$$

$$= \sqrt{0.2156}$$

$$= 0.46$$

$$\text{TEACHERS ATTITUDE } (\bar{X}) = 3.01$$

X	$X - \bar{X}$	$(X - \bar{X})^2 = X$
3.26	0.25	0.0625
3.56	0.55	0.3025
3.23	0.22	0.0484
2.20	-0.81	0.6561
2.90	-0.11	0.0121
2.96	-0.05	0.0025
2.96	-0.05	0.0025

$$\sum x^2 = 1.0866$$

$$S.D = \sqrt{\sum x^2 / N}$$

$$= \sqrt{1.0860/7}$$

$$= 0.1552$$

$$= 0.39$$

STUDENT ATTITUDE (\bar{X}) = 2.48

X	X - \bar{X}	(X - \bar{X}) ² = X
2.76	0.28	0.0784
3.20	0.72	0.5184
2.23	-0.25	0.0625
1.95	-0.53	0.2809
2.61	0.13	0.0169
1.81	0.66	0.4356
2.80	0.32	0.1024

$$\sum x^2 = 1.4951$$

$$S.D = \sqrt{\sum x^2 / N}$$

$$= \sqrt{1.4951 / 7}$$

$$= \sqrt{0.2135}$$

$$= 0.46$$

TEACHERS ATTITUDE (\bar{X}) = 2.43

X	X - X	(X - X) ² = X
2.06	-0.37	0.1369
1.86	-0.57	0.3249
2.16	-0.27	0.0729
3.13	0.70	0.4900
2.93	0.50	0.2500

$$\sum x^2 = 1.2747$$

$$N = 5$$

$$S.D = \sqrt{\sum x^2 / N}$$

$$= \sqrt{1.2747 / 5}$$

$$= \sqrt{0.2549}$$

$$= 0.50$$

STUDENTS ATTITUDE (X) = 2.78

X	X - X	(X - X) ²
2.26	-0.52	0.2704
2.15	-0.63	0.3969
2.50	-0.28	0.0784
2.73	-0.05	0.0025
3.26	0.48	0.2304

$$\sum x^2 = 0.9786$$

$$N = 5 \sqrt{\sum x^2 / N}$$

$$= \sqrt{0.9786/5}$$

$$= \sqrt{0.1957}$$

$$= 0.44$$

TECAHERS ATTITUDE (\bar{X}) = 2.70

X	$X - \bar{X}$	$(X - \bar{X})^2 = X$
2.96	0.26	0.0676
2.93	0.23	0.0529
2.70	0	0.0000
2.62	-0.10	0.01
2.06	-0.64	0.4096
2.96	0.26	0.0676
		$\sum x^2 = 0.6077$

$$N = 6$$

$$S.D = \sqrt{\sum x^2 / N}$$

$$= \sqrt{0.6077/6}$$

$$= \sqrt{0.1012}$$

$$= 0.32$$

STUDENTS ATTITUDE (\bar{X}) = 2.57

X	$X - \bar{X}$	$(X - \bar{X})^2 = X$
2.46	-0.11	0.0121

2.83	0.26	0.0676
2.30	-0.27	0.0726
2.81	0.24	0.0576
2.41	-0.16	0.0256
2.63	0.06	0.0036

$$\sum x^2 = 0.2394$$

$$N = 6$$

$$S.D = \sqrt{\sum x^2 / N}$$

$$= \sqrt{0.2394/6}$$

$$= \sqrt{0.0399}$$

$$= 0.20$$

**CALCULATION OF T-TEST BETWEEN THE TEACHERS AND STUDENTS
ATTITUDE TOWARDS**

**THE CRITERIAL FOR ORGANIZATION AND MANAGEMENT OF WOODWORK,
WORKSHOP**

DATA:- $N_1 = 60$, $N_2 = 30$, $X_1 = 2.65$, $X_2 = 2.39$

$$S_1^2 = 0.2156, S_2^2 = 0.3525$$

$$\text{Using } t = \frac{X_1 - X_2}{\sqrt{\frac{(N_1 - 1)S_1^2 + (N_2 - 1)S_2^2}{N_1 + N_2 - 2} \left(\frac{1}{N_1} + \frac{1}{N_2} \right)}}$$

$$t = \frac{2.65 - 2.39}{\sqrt{\frac{(60 - 1)0.2156 + (30 - 1)0.3525}{60 + 30 - 2} \left(\frac{1}{60} + \frac{1}{30} \right)}}$$

$$t = \frac{0.26}{\frac{(59)0.2156 + (29)0.3528}{88} (0.05)}$$

$$= \frac{0.26}{\sqrt{42.07 / 44}} = \frac{0.26}{\sqrt{9.5613}}$$

$$= \frac{0.26}{3.092}$$

$$= 0.084$$

CALCULATION OF T-TEST BETWEEN TEACHERS AND STUDENTS OF THE POSSIBLE OBSTACLE RELATED TO POOR ORGANIZATION AND MANAGEMENT OF TECHNICAL COLLEGES WOODWORK WORKSHOP

DATA:- $N_1 = 30$, $N_2 = 60$, $X_1 = 3.01$, $X_2 = 2.48$

$$S_1 = 0.1552, S_2^2 = 0.2135$$

$$\text{Using } t = \frac{X_1 - X_2}{\sqrt{\frac{(N_1 - 1)S_1^2 + (N_2 - 1)S_2^2}{N_1 + N_2 - 2} \left(\frac{1}{N_1} + \frac{1}{N_2} \right)}}$$

$$t = \frac{3.01 - 2.48}{\frac{(30 - 1)0.1552 + (60 - 1)0.2135}{30 + 60 - 2} \left(\frac{1}{30} + \frac{1}{60} \right)}$$

$$\frac{0.53}{(29)0.1552 + (59)0.2135 / 88(0.05)}$$

$$\frac{0.53}{17.0973 / 4.4}$$

$$= \frac{0.53}{3.88575}$$

$$= 0.27$$

CALCULATION OF T -TEST BETWEEN TEACHER AND STUDENT OF THE STRATEGIES THAT ARE EMPLOYED BY THE TECHNICAL TEACHERS DURING INSTRUCTIONS FOR OVERCOMING OBSTACLES TO EFFECTIVE ORGANIZATION AND MANAGEMENT OF WOODWORK, WORKSHOP

DATA:- $N_1 = 30$, $N_2 = 60$, $X_1 = 2.70$, $X_2 = 2.57$, $S_1^2 = 0.1012$ $S_2^2 = 0.0399$

Using $t = \frac{X_1 - X_2}{\sqrt{\frac{(N_1 - 1)S_1^2 + (N_2 - 1)S_2^2}{N_1 + N_2 - 2} \left(\frac{1}{N_1} + \frac{1}{N_2} \right)}}$

$$t = \frac{2.70 - 2.57}{\sqrt{\frac{(30 - 1)0.1012 + (60 - 1)0.0399}{3099 / 88} (0.05)}}$$

$$= \frac{0.13}{\sqrt{1.2020}}$$

$$t = \frac{0.13}{1.0964}$$

$$t = \underline{0.12}$$

