ASSESSMENT OF UTILIZATION OF TOOLS EQUIPMENT AND MATERIALS IN TEACHING BLOCKLAYING BRICKLAYING AND CONCRETING AT TECHNICAL COLLEGE LEVEL IN NIGER STATE

BY

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2016/1/63813TI

DEPARTMENT OF INDUSTRIAL AND TECHNOLOGY EDUCATION,

FEDERAL UNIVERSITY OF TECHNOLOGY MINNA, NIGER STATE

APRIL, 2023

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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.

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

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DECLARATION

I, Ahmad Muhammad olayinka with matric no. **2016/1/63813TI** an undergraduate student of 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 & Matric No Signature and Date

CERTIFICATION

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

Dr. RUFAI AUDU _____
Project Supervisor Sign and Date

Dr. Saba, Tswanya Moses _____
Head of Department Sign and Date

_____ _____
External Examiner Sign and Date

DEDICATION

This research is dedicated Almighty Allah, who gave me the knowledge, understanding, strength, and courage to carry out this work to its completion. I am grateful to my wonderful parent Mr, & Mrs. Ahmad for their love, encouragement, prayers, and support

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I give gratitude to almighty Allah for giving me the grace to complete this project, special thanks to my supervisor Dr. Rufai Audu for his patience, motivation and the necessary support he gave me throughout the period. I thank my reader, a wonderful mentor [Dr. Dauda Ibrahim] for the great support towards the success of this project, you will forever be remembered. My gratitude also goes to the Head of Department Dr. T M Saba, the project coordinator Dr. A.M. Hassan and the lecturers in the Department of Industrial and Technology Education. My sincere endless appreciation goes to my parent Mr. and Mrs. Ahmad for their patient, moral, spiritual and financial support throughout my years of study and my wonderful and most beloved sister Muminat Ahmad for their support, sacrifice and patience despite the inconveniences I might have caused them throughout the period of my study. My warm appreciate goes to my brother Mumin Ahmad and Mutiu Ahmad for their support.

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ABSTRACT

The study was designed to assess the utilization of tools, equipment and materials in teaching block laying bricklaying and concreting at technical college level in Niger state. Three research's and two hypotheses guided the study. A survey research design was adopted for the study. The study was conducted in all the technical colleges of Niger state. The target population for the study was 130 respondents and which comprises of 50 BBC teachers and 80 BBC students. The instrument for data collection was a structured questionnaire developed by researcher through extensive review from related literature, The instrument was validated by three lecturers from the Department of Industrial and Technology Education. Mean and standard deviation was used to answer the research questions t-test statistics was used to test the hypotheses of 0.05 level of significance. The findings of the study shows that inadequate equipment are the major problems facing technical colleges which lead to the poor performance of BBC students and also un-utilization of the available BBC tools, equipment and materials. Based on the findings of the study, the following recommendation were preferred as a way forward: the government should give urgent attention to increase, change and replace all the outdated tools, equipment and materials in all the technical colleges.

TABLE OF CONTENTS

LIST OF TABLES

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Block, Brick and Concreting (BBC) is one of the trade offered in technical colleges for the purpose of acquiring theoretical knowledge and practical skills in building construction. The Federal Republic of Nigeria (FRN, 2013) stated that technical education is an aspect of education which leads to the acquisition of practical and applied skills as well as basic scientific knowledge. The goals of BBC as put forward by the National Board for Technical Education [NBTE, 2001] include;

i. To offer the learners with basic ideas and skills that would make the trainee execute building task competently in all aspect of building and concreting;
ii. To offer learners with the basic knowledge of the characteristics as well as utilization of Building materials and the competencies in the manufacture of quality concrete materials
iii. To expose the learners in the building option to the fundamental construction approaches, Materials as well as principles, so that the trainee could be capable of understanding the several vital areas in the building trade.
iv. To expose learners to the fundamental details in residential plan as well as to make the trainee translate buildings with facility.
v. To offer the learners with the fundamental ideas of finishing resources related to building trade as well as to make the trainee utilize such finish competently.

vi. To achieve the objectives stipulated by NBTE tools, equipment and materials to be used in the workshop for students practical should be made readily available for proper utilization.

But report from Adedeji (2011) observed that most available tools equipment and materials in technical colleges are only being utilized for administrative purposes. Therefore, this study is aimed at assessing the availability and utilization of tools, equipment and materials in teaching BBC in technical colleges level in Niger State with the objectives of improving the practical skills of the technical colleges student to boost up the standard of building construction.

Assessment in any education programme is anything which determines learning outcomes in term of knowledge, skills, attitudes, ability and intelligence acquired in the course of study. In any educational sector decisions about student's promotion are based on the outcomes of an assessment. Kenneth and Keith (2002) viewed assessment as the processing of examining carefully, thoroughly and objectively as possible in order to ascertain strength and weakness of each student in the school. Therefore assessment can be seen as systematic process of judging the worth, desirability, effectiveness or adequacy of something according to a given criteria.

Assessment and utilization of block, bricklaying, and concreting tools, equipment and materials in teaching technical college level explain how obtainable the tools, equipment and material in such schools. According to Ngwu (2014), most block laying and bricklaying tools are not adequately available in schools. This therefore implies that, even though teachers might be adequately trained and willing to impact the knowledge they have to student, they are

blocked from doing so by this lack of tools equipment and workshop facilities.

The research revolve round the provision of block laying & bricklaying tools, equipment and materials, ensuring existence of functional building workshop, consistent power supplies in school and provision in house training for teachers so that they are in touch with the development in building technology and other related technologies. Egomo et al. (2012). In their research paper titled- assessment and utilization of block, brick and concreting tools for effective instructional delivery in tertiary institutions in Niger state Nigeria revealed that the assessment and utilization of BBC tools, equipment and material for effective instructional delivery is relatively low.

They went on to argue that this affects the quality of graduates produced from these institutions. Tools, equipment and material are any physical item that can be used to achieve a goal, especially if the item is not consumed in the process. Tools that are used in particular fields or activities may have different designations such as "instrument", "utensil", "implement", "machine", "device," or "apparatus".

The set of tools needed to achieve a goal is "equipment". The knowledge of constructing, obtaining and using tools is technology. Thus the assessment and utilization of Tools, equipment and material deserve serious attention for effective teaching and learning of block laying & bricklaying. Eze (2005) posted that to give training that will have impact on students requires an effective utilization of tools and equipment.

Nigerian Educational Research and Development Council (NERDC) (2007) stated that the successful implementation of Senior Secondary schools demands that the

following must be provided in secondary schools. Well trained teachers, well equipped laboratory. These basic requirements must be provided to be able to produce school levels with BBC skills.

The environment in which the teaching and learning should take place should become conducive for learning these shows that adequate or availability and utilization of tools in BBC programme in technical colleges enhance the appropriate process of the skills and knowledge to be acquired for any student to impact positively to the development of the society or nation he/she must undergo training in the field of building technology.

1.2 Statement of the Problem

According to the National Board for Technical Education (N.B.T.E, 2001). BBC graduates from technical colleges in Niger State and other States in Nigeria are expected to upon completion of the course have acquired practical skills to secure paid employment or set up their and become self-employed and be able to employ others. National Business and Technical Examination Board (NABTEB, 2004) chief examiners report revealed that candidates Performance in BBC practical examination was too low. This decline in students' performance has been linked to several variables among them is the instructional method and resources adopted by the teacher and the assessment and utilization of tools, equipment and materials for teaching BBC at technical college level. This poor performance of students particularly in BBC has negative effect on the number of qualified skilled and self-reliant graduates of the programme. Although increased emphasis has been placed by the state governments on skill acquisition in both secondary and vocational schools in Nigeria to equip students with useful skills and to improve their

employability opportunities.

1.3 Purpose of the Study

The main purpose of this study is to assess the availability and utilization of tools, equipment and materials in teaching BBC in Technical Colleges level in Niger State. Specifically the study seeks to:

i. Identify the tools, equipment, and material for teaching BBC at technical colleges in Niger State.
ii. Identify the availability of tools and equipment for teaching BBC in technical colleges Niger State.
iii. Assess the extent to which the tools, equipment and materials are utilized in teaching BBC in technical colleges in Niger State.

1.4 Significance of the Study

This study will be of great benefit to the teachers, students, state government, federal Government and the society at large. Teachers in technical colleges will become a beneficiary of this research by putting more effort in the proper utilization of tools, equipment and material in BBC programme in technical college which will bring about standard in future development of student and colleges at large.

Students will also benefit from this study by improving their knowledge and understanding which will enable them to be a good part and contributor to the labour market after graduation due to proper utilization of tools, equipment and materials in BBC programme learnt right from secondary school through skilled teachers and workshop attendants.

State government will also benefit from this research by creating awareness to the federal Government to inform them of all the facilities and tools needed in all technical colleges in the field of building and other fields to boost up the students

practical experience to enable them to contribute positively to the development of the society.

The second benefit of the state government is to build and improve the quality of teachers of technical colleges, the destruction of some of the building in the state will drastically reduce if not completely eradicated, this will boost up state government economy and save some of the fund used in reconstruction of collapsed building in the state. Every individual in the society will benefit from this study by living comfortably in their houses without fear of substandard building which can collapse at any time, so this achievement will make their life and properties to be safe.

1.5 Scope of Study

This study is limited to the assessment and utilization of tools, Equipment and Materials in teaching BBC in technical college level in Niger state. This research will only assess the availability of the tools and equipment and the extent of utilization in technical colleges in Niger State.

1.6 Research Questions

i. What are the tools, equipment and materials available for teaching BBC in technical colleges in Niger State?

ii. To what extent are the tools, equipment and materials utilize in teaching BBC in technical colleges in Niger State?

1.7 Hypotheses

i. The following hypothesis was formulated to guide the study.

H01: There is no significant difference in the mean response of BBC

students and teachers on the assessment of availability of tools, equipment and materials in teaching BBC in technical colleges in Niger State.

ii. H02: There is no significant difference in the mean response of BBC students and teachers on the extent to which tools, equipment and materials are utilized for teaching BBC in technical colleges in Niger state.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

The review of the related literature is outlined under the following sub heading;

2.1 Conceptual Framework

2.1.1 Historical Development of Technical Education in Nigeria.

2.1.2 Block Laying, Bricklaying and Concreting Program in Technical College

2.1.3 Block Laying Brick Laying Tools and Equipment

2.1.4 Utilization of Block Laying Bricklaying and Materials

2.1.5 Challenges Concerning the Utilization of Block Laying Bricklaying and Concreting Programme Alongside with Tools and Equipment in Technical College

2.1.6 Ways of Facilitating the Utilization of Block Laying Bricklaying Tools and Equipment in Technical College

2.2 Summary of literature review

2.1 Conceptual Framework

2.1.1 Historical Development of Technical Education in Nigeria

According to Odukoya (2009), the importance of education to general well-being of mankind cannot be over emphasized. Technical education is aspect of education which lead to the acquisition of applied skill as well as basic scientific knowledge (FRN, 1981). This principle has enlightened the objective of this study as to provide the technical knowledge and vocational skills and experience necessary for agriculture, industries commercial and economic development

Chukimerije (2011) submitted that technical and vocational education remains the only way for economic development in Nigeria. He appraises different effect and policies towards economic development in but all to no avail. He however identified some reasons for the desultory performance to include inadequate infrastructure and facilities, serious death of academic staff with cognate practical experience relevant for training of student to the meet of contemporary and of industry and employer wide connection between industries that this aspect of education has experience serious neglect right from the onset of western education in Nigeria. Those type of education enjoy high priority in our traditional African Education whose main aim is character training and job orientation (Mattawal, 2012). The arrival of missionaries with western education, technical education as corroborated by Ozoro (1982) who commented that it has been recognized for a long time that the largely literary b=curriculum in the Nigeria secondary school system does not prepare the soil to germinate and nature science and technology.

The missionary school in the 19 century introduced farming, bricklaying and carpentry but were not considered as integral part of western education and later

died down before the turn of the last century with few expectation like Balize memorial school in Abeokuta and CMS Grammar school and hope Waddell institute Calabar, the period between 1908-1935 witnessed the establishment of course in various department e.g. railway, marine, public works this mark the beginning of organized technical education in Nigeria. After all these achievement it was followed by establishment of engineering course at Yaba college of technology in 1932, but it was only little number of people that can benefit from it. Due to the requirement and the standard so the first technical school in Nigeria was established in yaba 1945 then some years later another set of institution was also established in Ibadan and Enugu year 1952 which are college of art, science and technology, the college undergo challenges of poor enrolment due to negative ideology people has regarding technical school that it is far less privilege ones and inferior compare to other types of education. But out of these three institutes only one in Ibadan offer Agriculture course in 1962. All the three colleges were shut down and their asset was taken over by first universities in Ife, Zaria, and Nsukka. Later little effort was made to encourage technical education in the country. In the 1970s more universities, polytechnic and other colleges of higher learning were also established but most of them were not technically oriented as most of them offers course in language, liberal; art and social sciences.

The period 1980-1983 witnessed the introduction and establishment of specialized technical institution that is federal universities of technology which were established to cater for manpower training in science and technology but this universities are underfunded with inadequate facilities this lead to merge of these universities with bigger ones by the Buhari/Idiagbon regime in 1984. Although these universities got their status restored in 1988-1991 only little progress was recorded in the area of

technology within the same period two of the universities of Agriculture (Markudi and Abeokuta) and later another was established at Umudike south Eastern Nigeria from the 1990s to date, these as a remarkable expansion of various technical institution in the country in term of infrastructure, enrolment figure, course content and increase in the number of technical colleges, monotecnics and polytechnics and universities of technology and record has shown that there is significant expansion in the various faculties of engineering and technology in other conventional universities.

There is also the introduction of information and communication technology ICT in the school system, also three polytechnics: Kaduna polytechnic, Ibadan polytechnic and Yaba polytechnic and some other polytechnics has upgraded to degree awarding institution.

Vocational and technical education to FRN 2004 is a comprehensive term referring to this aspect of the educational process involving an addition of general education in the study of technology and related science and occupation in various sectors of economic and social life.

The statement explain that all education in vocational in such a way that the individual may serve happily as far as it prepare for satisfactory living in the view of Thompson (2) vocational education aims at the development of human abilities in term of knowledge, skills, understanding so efficiently in carrying on the activities in vocational pursuit of his choice.

Winner (3) in his contribution opened that vocational education is designed to develop skill, abilities understanding attitude work habit and appreciation. Encompassing knowledge an information.

2.1.2 Block Laying Bricklaying and Concreting Program in Technical Colleges

The block/brick laying and concreting gradually came up and gained its important in the history it is used globally and accepted around the world more also the concept attained a great importance since 1990s certain author underscored the risk of invading epistemology i.e. the –concept being used to indicate all dimension of the education process, without allowing any differential analytical approach to its complexity the structure of brick/ block laying and concreting work in Nigeria could be like a tree branch. One can fully participated in labour market at high level of technical education. The method of teaching block/bricklaying and concreting program are way forward for the teacher to deliver his or her subject or course to the student based on predetermined instructional objecting in order to promote students learning.

However teaching methodology of block/brick laying and concreting will be inclined to the conventional teaching method to the extent of using some application by technical teacher in teaching block/bricklaying and concreting in technical college.

Kpangban and Onwuegba (1995) identified brick/block laying as consisting of recurrent instructional process applicable to various types of subject matter and usable by more than one teacher.

Olude (2004) stated that the study of technology without doubt requires well equips workshop, workshops tools, instructional materials and teaching aids are highly required by students. Any system of education that has to do with fast and real

understanding of knowledge have to be methodological systematic and practically oriented to achieved expert effect.

The technical teacher has to be updated about the teaching method that are appropriate for the environment, age and the generation i.e. using of computer system and other gadget to ease learning and teaching in order to achieve a best result from both sides.

According (Owoso 2002) stated the different method than can be adopted in vocational and technical colleges should be able to address to learner cognitive, psychomotive and effective domain. This mean he must comprehended and assimilate the knowledge to be able to adopt it into manipulated and useful skill and he also stress that the analysis and evaluation of the reason behind education will determine the method to be employed.

The various methods to be applied which include pedagogical application by technical teachers in taking block/bricklaying and concreting program in technical colleges has been found to be a way of science and technology in many schools.

The teaching and assessment are as follow;

i. Instructional method in block/brick laying and concreting.
ii. Student centred method (discussion) method in block/bricklaying and concreting
iii. Exhibition method in block/ bricklaying and concreting
iv. Assessment method in block/bricklaying and concreting program

Technical Education endures all aspect of educational activities which involve learning in general to produce self-reliance people or individual e.g. bricklaying and

concreting program. Technical education is also expected to be part of well-trained manpower and competent employment in labour market.

Olaitan (1990) described block/bricklaying as a factor that significantly contributes to the manpower need of the nation. BBC program are very important to each and every individual to have the experience and knowledge to contribute positively to the nation economy.

Osuji (2002) stated that quality control and safety during construction represent important concern for project manager. Failure in construction facilities can result in a very large cost.

2.1.3 Block laying Bricklaying Tools and Equipment.

A tool is any physical item than can be used to achieve a goal. If the item is not consumed in the process informally speaking it can be used to describe a specific procedure specific purpose as well. The uses of tools by human are not the only creature known to employ tools in their day to day life.

Tools are often also referred to as machine, functional device which serve as individual house hold usually a set of tools that are designated for a specific task is known as equipment

Hand Trowel

This is a portable hand tool use for multipurpose construction and building activities, some of its uses are transfer of concrete, levelling of block model when laying, plastering of wall and levelling of flour.

Hand trowel is further divided in to different types such as brick trowel, buck trowel, concrete finishing trowel, corner trowel, gauging trowel, margin trowel, painting trowel and step trowel etc. All the above mentioned trowel are designed differently for their appropriate purpose

Shovel

This is a tool for various work such as digging, lifting, and moving bulk materials (soil, coal, gravel, ore etc.). Most shovel are hand tool consisting of a blade fixed to a medium length handle and some types of shovel are grain shovel, roofing shovel, etc.

Shovels are used to mix materials (concrete) thoroughly and are also used to transfer concrete into head pan. The tool is very important in block laying and concrete program which have made work very easy.

Wheel Barrow

A Wheel barrow is a small hand propelled vehicle with just one wheel, designed to be pushed and guided by a single person using two handle at the rear. This is used to transfer a dried block or a fired brick from a point of lay to wear house or place for storage which enable the carrier to move conveniently without much of stress i.e the mechanical advantage is greater than one.

Mason Hammer

This is a tool used for hammering nail and for splitting block or brick with the other end. One end is square and flat and is used like hammer, the other end is sharp like a small chisel. The sharp chisel end Is used to make a cutting line around the masonry to be split. The chisel 9 end is then used to make off any burr or piece which has not broke off completely. The masonry hammer can become dangerous if not properly used and kept.

Block Mould

This play a major role in producing block which give the block a shape and pattern that mason wants. It's usually in pair, one is hollow containers and the other one will be put inside the hollow containers to create the hole of the block. Block mould comes in three sixes which are as follows

I. M100 4 inch-400 length * 190height * 100 width

II. M150 6 inch-400 length *190 height *150 width

III. M200 8 inch -400 length *190 height *250 width

Level

This is another important measuring tool which make arrangement of block to be perfect and straight and also used in the setting out of a building.

Block making machine

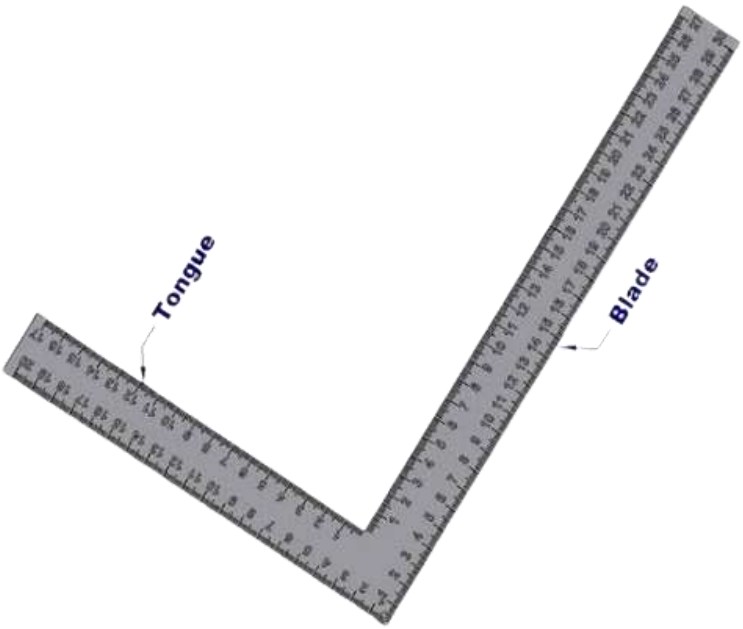
This is fully automatic heavy duty stationary types of concrete block the machine comes with complete automatic set up with mixer machine and other process involved when making block. This machine is suitable for high production of block and less labor support. It is made up of different specification of block and other e.g interlocking, pave block, hollow block, Its just to replace the mould of required block or any other.

Mixer

This equipment is used for standard production of block. It is used to mix concrete properly and at a normal ratio in a very large volume before it is been transferred to block laying cite or block casting machine for desirable types of blocks.

Mansory Line

In order to have a easier time laying a straight wall, a mason line is recommended. It is recommended that you use a nylon or Dacron line, stretched between two corners (and anchored at the corner) of the wall you are building. By laying the line, you won't have to depend on your level as of ten, speeding up the job. A mason line will let you build walls bulges or hollows. A mason line is placed very close to the block you are laying, but with enough room to still permit you to wipe off the excess mortar without disturbing the line.



Steel Square

The steel square is a tool used in block laying. It is used to lay out structures that are square (that is, built at accurately measure right _angles at the edge of two or more wall), many of which are made of steel, but the name steel square refers to a specific long-armed square that has additional uses for measurement, especially of various angle. It consists of a long arm and short arm which meet at an angle of 90 degrees (a right angle). It can also be made of aluminium or polymers, which are light and resistance to rust.

2.1.4 Utilization of Block/Brick laying tools and materials

Block are the major building materials on which other materials depend, so it as to be utilized very well by learning more on the field and improving on it Some research project has been on this field by trying to replace expensive ratio materials with less expensive ones. Some of the other project on blocks and Bricks are

- The use of rice Husk Ash in low cost sand concrete block production (E.B Oyetola and M. Abdullahi)
- Utilization of iron tailing as partial replacement materials for binding agent in block making by Kamal (2013)

All the above mentioned research have immensely death with improvement and utilization of block/brick and economically uses.

Basically We Have Blocks and Bricks

Brick: Bricks are rectangle block, most commonly made from clay, shale, slate, concrete, calcium silicate or stone. It is produced by mixing with pure sand and water, then press the clay into steel molds and heated at high temperature 1t 100c which determine the strength of bricks, it serve as an insulator for heat and electricity which made it easy and habitable for an occupant of a house build by brick.

Block: Blocks are commonly made from concrete mixture. Blocks are larger in size than bricks; blocks are more in use as partition wall and interior application than bricks. The raw materials used in the production of blocks are sand, cement and water etc.

2.1.5 Challenges in utilization of brick/block laying tools and equipment

There are a lot of challenges facing the university graduate due to lack of employment although opportunities for skilled workers abound in the economy Salami (2011) posted that unemployment among youth has been attributed partially to a mismatch between inadequate education outcome and skill demand, they further explained the educational system especially technical colleges must provide

the skill profile as required by labour market to enhance the employability of young people.

The people of authority that are to provide the facilities (tools and equipment) neglects the impact of career of technical student in terms of employment opportunities simply because they regard technical school has been inferior compared to other aspect of education.

Technical education system continues to be directed primarily towards preparation for university education with a lot of skill acquisition even though the majority of students move directly into the labour force (Heinz et al., 1998).

Most people all over the world are quite of the power of technology both as a body of knowledge and as a way of life.

Human being need adequate food supply, safe drinking water, good shelter, transportation network, efficient health care and above all want live as modern men forgetting that all those good things of life are technology driven. Ejike (1990) pointed out that the inability of Nigerian government to adequately finance technical colleges for future challenges is a serious impediment to technological growth and development.

Power is critical to the country industrial development but the state of power in Nigeria is better imagined than described. As Adebayo (2008) put it the country was ranked 158 out of 177 countries on the human development index survey by the united nation development program (UNDP, 2007/2008). Due to poor provision of facilities in technical school has proven the inability of the government to produce high number of professional most especially in Building technology. It is sad to note that no positive impact has been made in brick laying and concreting due to

maximum record of collapse structure in Nigeria. A contemporary problem of brick laying and concreting work in Nigeria is the poor status of technical colleges and regard have not been shown for the need to train teachers to be skilled in brick laying work, to be able to impact the same knowledge into the students, this concern has been thrown away forgetting that there will be competitiveness in the later in the years in which teacher need to be well trained and well-motivated with the manpower to subsequently create and develop further manpower. Nwosu 1992 lamented that through technical college have been established by both federal and state government with vocational training centres built by government, individual established in all states, yet there is acute shortage of building teachers. This is because there are no commensurate incentive to attract and retain those professional teachers similarly, (Olaitan 1996) noted that the low level of effectiveness of building technology in Nigeria are due to lack of coordination of the program, inadequate facilities for block work and concrete mixing, they quite job oriented course, teacher are poorly remunerated or motivated. This resulted to the situation where most of the graduates of vocational and technical institutions in the country lack the desired technical skills for employment in industries and other organization more also skills acquire in school quickly become obsolete in the labour market and the curriculum of technical education takes a longer time to be reviewed in line with fast technological development. The school is the brood house and hatchery of culture and technology for national development. The socio economic status of technical teacher does not compare favourably with, if not exceed those of other professions, then the teacher cannot confidently carryout research, invent and innovate ideas or give the best of what he has to the learners.

2.1.6 Ways of facilitating the utilization of Block/Brick laying tools and Equipment in Technical Colleges.

One of the best ways of evaluating the level of assimilation of student is by asking question and by identification of teaching aid and instructional materials. However, the teachers and the parents should work together in providing the appropriate tools and equipment to facilitate the student's standard of learning. Some of the ways are itemized as follows:

i. Organizing of frequent seminar: Seminars should be organized by the school management which the staffs and parents must be in attendance in a convenient atmosphere for proper discussion regarding the availability of the basic block/brick laying tools and equipment through the assistance of the government by sending a representative that will speak on their behalf about all the challenges the school is facing.

ii. The board members of the school can also make effort within their capability to provide the necessary tools and equipment for their student to aid their learning.

iii. Parents and teachers meeting (PTA) can also be of help by contributing fund as a form of investment in their children in school to give them the best education in order for them to be self-reliant in the nearest future. This is because technical schools bring out the potential of student by making them to discover who they really are.

iv. The school management and the community can also invest in other field like agriculture and sue the dividend to improve their school in other to achieve the aim the objective of the school.

2.2 Summary of literature review

Block/brick laying and concreting in technical colleges has been found to be same science subject that are thought in schools the theory of vocational pointed out that for very occupation there is minimum of productive ability which an individual must possess in order to secure employment in the occupation, so brick/block laying and concreting was introduced by missionaries, but later died due to lack of interest among Nigerian people. If vocational education is not properly carried that point where people can individually train, then it is not effective. According to Heward (1980), the survival of any industry is largely dependent on the calibre of skilled craftsman when there is no good skill training in block/bricklaying and concreting there will definitely be a future problem in getting professionalism in building construction work.

A contemporary problem of block/brick laying and concreting working technical colleges today is the poor status of the system of education in Nigeria, and regard have not been shown for the need to train teachers to be skill in block laying work to be able to impact the same knowledge in to the student thus concern have been thrown away forgetting that there will be competiveness in the later years. In which teachers need to be well trained and well-motivated with the manpower to subsequently create and develop further manpower. This resulted to the situation where most of the graduates of vocational and technical institution in the country lack the desired technical skills for employment in industries and other organization. However, the teacher should always learn to carry the student along, on like bricklaying or bock laying and concreting. It is very necessary for teachers to develop a fundamental skill in practical field. It is equally filled with suggestion of what not to do in the classroom. Student often have little expertise in knowing if the

method selected by the teacher is quite useful in addressing issues pertaining to bricklaying or block laying and concreting and teachers are to be well committed in handling those issues. This will bring an improvement in building department in technical colleges; efforts are always on by intellectuals.

CHAPTER THREE

RESEARCH METHODOLOGY

This chapter describe the research design, area of the study, population of the study, instrument for data collection, validation of the instrument, administration instrument, method of data analysis and decision rule.

3.1 Design of the study

The research design used in carrying out this study was the survey research design where questionnaires was used to solicit the opinion of the respondents on the issue of utilization of tools and equipment in block laying and concreting programs in technical colleges in Niger state. The survey research design was chosen as an appropriates method for the research as its seeks the views of people about a particular issue concern them, give room for research to study the group of people by sourcing for information from them.

3.2 Area of the study

The study was conducted in Niger state, it covered all technical colleges namely, Government Technical college Bida, Government Technical College Kontagora, Government Technical College Minna, and Government Technical College New Bussa.

3.3 Population of the Study

The entire study was conducted in different Technical Colleges in Niger state. The targeted population for this study comprised of teachers and students and Lack of availability and utilization of tools and equipment in all the Technical colleges in Niger state.

Table 1: Population of Technical Colleges in Niger state.

S/N	Technical Colleges	Teacher	Student
1	Government Technical Colleges,Eyayi Bida	10	80
2	Government Technical Colleges, Kontagora	20	50
3	Government Technical Colleges, Minna	5	50
4	Government Technical Colleges, New Bussa	15	120
	Total	50	300

3.4 Sample and Sampling Techniques

A random sampling technique was used in selecting technical colleges within the area of study which are Government technical college Bida, Government technical college Kontagora, Government Technical College Minna and Government Technical college New Bussa, A random sampling techniques was used in selecting

20 students from each school making a total 80students, while BBC teachers are total of 50.

Random selected and Techniques

S/N	Technical colleges	Teacher	Student
1	Government Technical Colleges, Bida	10	80
2	Government Technical Colleges, Kontagora	20	50
3	Government Technical Colleges, Minna	5	50
4	Government Technical Colleges, New Bussa	15	120
	Total	50	300

3.5 Instrument for Data Collection

A structured questionnaire was the main instrument used by the researcher for the data collection. The Questionnaires was structured under two part I and II. Part I consist of respondent's personal data while part II consists of section A and B respondents view on items of questionnaire where were numbered from 1 to 31. Section A consists of 31 items which dealt with the tools and equipment available for teaching BBC in technical colleges in Niger state. Section B; this section contained 31 items which dealt with the extent at which tools and equipment are utilized in teaching BBC in technical colleges in Niger state.

All the items will be responded to by using four Likert rating scale.

Very Highly Utilized=4 Yes=2

Highly Utilized=3 No=1

Moderately Utilized=2

3.6 Validation of the instrument.

The instrument was validated by three lectures in the department of industrial and Technology Education, Federal university of technology Minna, the validators suggestion were incorporated in the final draft of the instrument, to ensure that the instrument was capable of eliciting necessary information that is needed for the study.

3.7 Administration of the instrument

The questionnaire was personally administered by the researcher to the respondents and the completed questionnaires were collected by the research.

3.8 Method of Data Analysis

The Data collected was analysed using frequency and percentage count from table 1 to 4 by dividing the quality available over the NBTE requirement quantity requirement multiply by 100 which is rated as 50% upward adequate and less than 50% downward inadequate while from table 5 and 6 the data collected was analysed using frequency count, mean and standard deviation. The hypotheses were tested using t-test statics tool at 0.05 level of significance. The mean of each item was computed by multiplying the frequency of each response mode with appropriate nominal value and divided by the sum obtained under each with the number of the respondent to an item as shown below.

Mathematically the mean value

$\bar{x} = \sum_{\mu} fx$

Where X=Mean

$\sum$ = Summation or sum

$\bar{x}$= Normal value of option

μ=Number of items

F= frequency

Therefore, x=$\sum$ fx/μ

$\frac{1+2+3+4}{4}$ =2.50

X=2.50

3.9 Decision Rule

In order to determine the level of acceptance or rejection of any items, a mean score of 2.50 was used. Therefore, any item with a mean response of 2.50 and above was accepted and any item with a mean response of 2.49 and below rejected.

CHAPTER FOUR

PRESENTATION OF DATA ANALYSIS

This chapter was basically concerned with the presentation, analysis of data and interpretation of data. The data was presented according to the research questions and the hypothesis formulated for the study.

4.1 Research Question 1:

What are the tools, equipment and material available for teaching BBC at technical colleges in Niger state?

Table 4.1: Frequency and percentage of tools and equipment available for teaching BBC based on NBTE minimum standard in Government Technical Colleges Eyigi, Bida, Niger state.

N1=50, N2=80

S/N	Tools and Equipment	NBTE Min. Qty. Rqrd	Quality Available	Percentage %	Remark
1	Bricks trowel	25	6	20	Inadequate
2	Spirit level	20	4	36	Inadequate
3	Plumbing bulb	20	7	35	Inadequate
4	Builder square	25	12	20	Inadequate
5	Chisel	20	12	50	Adequate
6	Chip hammer	10	5	50	Adequate
7	Sledge hammer	10	5	50	Adequate
8	Line and pins	25	15	60	Adequate
9	Corner block	25	3	30	Inadequate
10	Wooden float	10	20	80	Adequate
11	Spade	20	20	50	Adequate
12	Spot board	20	10	45	Inadequate
13	Pix axe	20	12	60	Adequate
14	Measuring Tape	20	15	60	Adequate
15	Tilting mixer	1	0	0	Adequate
16	Steel rule	10	4	0	Inadequate
17	Head pan	20	30	30	Adequate
18	Block and brick mould	15	5	50	Adequate
19	Leveling instrument	10	3	30	Inadequate
20	Leveling staff	20	16	30	Inadequate
21	Mechanical vibrator	4	40	46	Inadequate
22	Block	1	12	12	Inadequate

	making machine				
23	Brick making machine	1	16	30	Inadequate
24	Slump core	2	1	50	Adequate
25	Club hammers	10	8	30	Inadequate
26	Sieves	1	1	100	Adequate
27	Raging pole	20	7	25	Inadequate
28	Bucket	10	10	100	Adequate
29	Wheel barrow	5	17	30	Inadequate
30	Digger	10	12	50	Adequate
31	Watering can	5	30	60	Adequate

Table 3.1 showed the frequency and percentage of tools and equipment available for teaching BBC in Government technical colleges Eyagi Bida Niger state. 13 out of 31 tools and equipment in the table which include 5,6,8,9,12,13,14,18,24,26,28,30 and 31 have their percentage values equal to or greater than 50% this indicated that these tools and equipment are adequate for teaching BBC while item 1,2,3,4,7,10,11,15,17,19,20,21,22,23,25,27, and 29 are all inadequate with percentage values less than 50%.

Table 4.2: Frequency and percentage of tools and equipment available for teaching BBC based on NBTE minimum standard in Government Technical Colleges Kontangora in Niger state.

S/N	Tools and Equipment	NBTE Min. Qty. Rqrd	Quality Available	Percentage %	Remark
1	Bricks trowel	25	15	50	Adequate
2	Spirit level	20	15	75	Adequate
3	Plumbing bulb	20	12	60	Adequate
4	Builder square	25	20	80	Adequate
5	Chisel	20	20	100	Adequate
6	Chip hammer	25	5	50	Adequate
7	Sledge hammer	10	5	50	Adequate

8	Line	25	15	60	Adequate
9	Corner block	10	3	80	Adequate
10	Wooden float	25	20	80	Adequate
11	Spade	10	20	50	Adequate
12	Spot board	20	10	50	Adequate
13	Pix axe	20	12	60	Adequate
14	Measuring Tape	20	15	60	Adequate
15	Tilting mixer	1	1	100	Adequate
16	Steel rule	10	4	50	Adequate
17	Head pan 20	20	10	60	Adequate
18	Block and brick mould	10	5	50	Adequate
19	Leveling instrument	10	3	30	Adequate
20	Leveling staff	20	16	30	Adequate
21	Mechanical vibrator	2	1	50	Adequate
22	Block making machine	1	0	10	Inadequate
23	Brick making machine	1	0	30	Inadequate
24	Slump core	2	1	50	Adequate
25	Club hammers	3	8	30	Inadequate
26	Sieves	1	1	100	Adequate
27	Raging pole	20	7	50	Inadequate
28	Bucket	10	10	100	Adequate
29	Wheel barrow	5	4	70	Adequate
30	Digger	15	7	60	Adequate
31	Watering can	12	30	60	Adequate

Table 3.2 showed the frequency and percentage of tools and equipment available for teaching BBC in Government technical colleges Kontangora in Niger state. 27 out of 31 tools and equipment in the table which include 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,24,26,28,29,30 and 31 have their percentage values equal to or greater than 50% this indicated that these tools and equipment are adequate for teaching BBC while item 22,23,25 and 27 are all inadequate with percentage values less than 50%.

Table 4.3: Frequency and percentage of tools and equipment available for teaching BBC based on NBTE minimum standard in Government Technical Colleges Minna Niger state.

S/N	Tools and Equipment	NBTE Min. Qty. Rqrd	Quality Available	Percentage %	Remark
1	Bricks trowel	25	5	20	Inadequate
2	Spirit level	20	12	60	Adequate
3	Plumbing bulb	20	15	50	Adequate
4	Builder square	25	20	80	Adequate
5	Chisel	20	10	50	Adequate
6	Chip hammer	10	5	50	Adequate
7	Sledge hammer	10	5	50	Adequate
8	Line	25	15	60	Adequate
9	Corner block	25	20	30	Inadequate
10	Float wooden	25	5	80	Adequate
11	Spade	10	15	30	Inadequate
12	Spot board	20	6	50	Adequate
13	Pix axe	20	5	60	Adequate
14	Measuring Tape	20	15	60	Adequate
15	Tilting mixer	1	0	0	Inadequate
16	Steel rule	10	10	100	Adequate
17	Head pan 20	20	10	60	Adequate
18	Block and brick mould	10	5	50	Adequate
19	Leveling instrument	10	6	60	Adequate
20	Leveling staff	20	16	60	Adequate
21	Mechanical vibrator	2	0	0	Inadequate
22	Block making machine	1	0	12	Inadequate
23	Brick making machine	1	0	30	Inadequate
24	Slump core	2	1	50	Adequate
25	Club hammers	10	2	30	Inadequate
26	Sieves	1	1	100	Adequate
27	Raging pole	20	7	50	Adequate
28	Bucket	10	10	100	Adequate
29	Wheel barrow	16	2	30	Inadequate
30	Digger	10	4	30	Inadequate
31	Watering can	12	2	40	Inadequate

Table 3.3 showed the frequency and percentage of tools and equipment available for teaching BBC in Government technical colleges Minna Niger state. 19 out of 31 tools and equipment in the table which include 2,34,5,6,7,8,9,10,11, 14,,15,17,19,20,24,26,27 and 28 have their percentage values equal to or greater than 50% this indicated that these tools and equipment are adequate for teaching BBC while item 1,16,18,21,22,23,25,29,30 and 31 all inadequate with percentage values less than 50%.

Table 4.4: Frequency and percentage of tools and equipment available for teaching BBC based on NBTE minimum standard in Government Technical Colleges New Bussa Niger state.

S/N	Tools and Equipment	NBTE Min. Qty. Rqrd	Quality Available	Percentage %	Remark
1	Bricks trowel	25	5	20	Inadequate
2	Spirit level	20	4	36	Inadequate
3	Plumbing bulb	20	7	35	Inadequate
4	Builder square	25	12	20	Inadequate
5	Chisel	20	10	50	Adequate
6	Chip hammer	10	5	50	Adequate
7	Sledge hammer	10	5	50	Adequate
8	Line	25	15	60	Adequate
9	Corner block	10	3	30	Inadequate
10	Float wooden	25	20	80	Adequate
11	Spade	10	20	50	Adequate
12	Spot board	20	10	45	Inadequate
13	Pix axe	20	12	60	Adequate
14	Measuring Tape	20	15	60	Adequate
15	Tilting mixer	1	0	0	Adequate
16	Steel rule	10	4	0	Inadequate
17	Head pan 20	5	30	30	Inadequate
18	Block and brick mould	10	5	50	Adequate
19	Leveling instrument	10	3	30	Inadequate
20	Leveling staff	20	16	30	Inadequate
21	Mechanical vibrator	16	40	46	Inadequate
22	Block making machine	26	0	0	Inadequate
23	Brick making machine	12	0	30	Inadequate
24	Slump core	2	1	50	Adequate
25	Club hammers	3	8	30	Inadequate

26	Sieves	1	1	100	Adequate
27	Raging pole	20	7	25	Inadequate
28	Bucket	10	10	80	Adequate
29	Wheel barrow	16	17	30	Inadequate
30	Digger	10	12	30	Inadequate
31	Watering can	12	30	60	Adequate

Table 3.4 showed the frequency and percentage of tools and equipment available for teaching BBC in Government technical colleges New Bussa in Niger state. 14 out of 31 tools and equipment in the table which include 5,6,7,8,10,11,13,14,15,18,24,26,28 and 31 have their percentage values equal to or greater than 50% this indicated that these tools and equipment are adequate for teaching BBC while item 1,2,3,4,5,9,12,16,17,19,20,21,22,23,25,29 and 30 all inadequate with percentage values less than 50%.

Research Question 2: To what extent are the tools and equipment utilized in teaching BBC in technical colleges of Niger state.

Table 4.5: The mean response of student and teacher on the level of utilization of BBC tools and equipment in technical colleges in Niger state.

S/N	Tools and Equipment	$\overline{X}_1$	$\overline{X}_2$	$\overline{X}_t$	Remark
1	Bricks trowel	2.85	3.04	2.94	Utilized
2	Spirit level	2.98	3.05	3.02	Utilized
3	Plumbing bulb	3.19	2.18	2.69	Utilized
4	Builder square	3.09	1.98	2.40	Not Utilized
5	Chisel	3.19	2.81	3.00	Utilized
6	Chip hammer	2.78	1.72	2.25	Not Utilized
7	Sledge hammer	2.49	2.11	2.30	Not Utilized
8	Line	2.89	3.10	3.10	Utilized
9	Corner block	1.90	3.00	2.45	Not Utilized
10	Wooden float	2.04	3.45	2.75	Utilized
11	Spade	3.25	2.50	2.64	Utilized
12	Spot board	2.70	2.00	2.88	Utilized
13	Pix axe	3.25	2.89	2.35	Not Utilized
14	Measuring Tape	2,16	2.96	2.56	Utilized
15	Tilting mixer	2.38	3.02	2.94	Utilized
16	Steel rule	2.34	1.20	1.77	Not Utilized
17	Head pan	3.23	2.55	2.89	Utilized
18	Block and brick mould	2.85	3.02	2.95	Utilized
19	Leveling instrument	2.57	2.88	2.89	Utilized
20	Leveling staff	1.99	2.01	1.98	Not Utilized

21	Mechanical vibrator	1.50	2.00	1.98	Not Utilized
22	Block making machine	2.56	2.87	2.84	Utilized
23	Brick making machine	1.23	1.67	2.11	Not Utilized
24	Slump core	1.67	1.89	1.90	Not Utilized
25	Club hammers	2.84	2.89	2.64	Utilized
26	Sieves	2.74	2.78	2.98	Utilized
27	Raging pole	3.45	3.56	3.89	Utilized
28	Bucket	3.40	2.56	2.98	Utilized
29	Wheel barrow	3.44	2.83	2.98	Utilized
30	Digger	3.44	3.00	2.54	Utilized
31	Watering can	3.40	2.50	2.96	Utilized

Keys:

N1=80, N2=50

N1=Number of student

N2=Number of Teacher

X1=Mean of student

X2= Mean of Teachers

Xt=Average mean of student and teachers

The data is Table 5 indicated that the mean response of student and teacher showed that 21 out of 31 were Utilized i.e 1,2,3,5,8,10,11,12,14,15,17,18,19,22,25,26,27,28,29,30 and 31 based on the criticism mean of 2.50.10 item were not utilized i.e 4,6,7,8,8,13,16,20,21,23, and 24 based on criterion mean of 2.50

4.3 Hypothesis

There was no significant different in the mean response of student and teacher on the utilization of BBC tools and equipment.

Table 4.6: T-test analysis of BBC student and teacher on the level of student utilization of BBC tools and Equipment in Niger state.

S/N	Tools and Equipment	$\overline{X}_1$	$\overline{X}_2$	S.D$_1$	S.D$_2$	T$_{cal}$	Remarks
1	Bricks trowel	2.85	3.04	0.85	0.77	1.18	Accepted
2	Spirit level	2.98	3.05	0.90	0.70	0.22	Accepted
3	Plumbing bulb	3.19	2.18	0.64	1.05	-3.49	Rejected
4	Builder square	3.09	1.98	0.94	0.61	1.67	Accepted
5	Chisel	3.19	2.81	0.95	0.60	1.22	Accepted
6	Chip hammer	2.78	1.72	0.62	0.78	-2.03	Rejected
7	Sledge hammer	2.49	2.11	0.50	0.31	1.40	Accepted
8	Line	2.89	3.10	0.71	0.64	0.61	Accepted
9	Corner block	1.90	3.00	0.61	0.93	-3.80	Rejected
10	wooden float	2.04	3.45	0.87	0.78	4.50	Rejected
11	Spade	3.25	2.50	0.99	0.68	0.61	Accepted
12	Spot board	2.70	2.00	0.68	0.49	2.05	Rejected
13	Pix axe	3.25	2.89	0.71	0.81	· 0.82	Accepted
14	Measuring Tape	2,16	2.96	0.69	0.91	· 1.30	Accepted
15	Tilting mixer	2.38	3.02	0.74	0.50	2.59	Rejected
16	Steel rule	2.34	1.20	0.93	0.41	0.08	Accepted
17	Head pan	3.23	2.55	0.88	0.69	2.82	Rejected
18	Block and brick mould	2.85	3.02	0.84	0.94	· 2.94	Rejected
19	Leveling instrument	2.57	2..8	0.78	0.77	0.90	Accepted
20	Leveling staff	2.23	2.01	1.12	1.11	1.34	Accepted
21	Mechanical vibrator	1.76	2.00	0.91	0.38	0.74	Accepted
22	Block making machine	2.83	2.85	0.81	0,50	0.94	Accepted
23	Brick making machine	2.23	1.99	0.95	0.49	0.97	Accepted
24	Slump cone	2.65	1.33	0.52	0.60	-2.26	Rejected
25	Club hammers	2.84	2.85	1.23	0.80	0.20	Accepted
26	Sieves	2.74	2.55	0.66	0.71	-3.01	Rejected
2	Raging pole	3.45	1.99	0.89	0.68	2.24	Rejected

27							
28	Bucket	3.40	2.55	1.19	0.88	0.99	Accepted
29	Wheel barrow	3.44	2.83	0.40	1,00	2.01	Rejected
30	Digger	3.56	2.42	1.67	0.62	3.00	Rejected
31	Watering can	3.40	2.50	0.92	0.55	0.94	Accepted

SD1=Standard deviation of student

SD2=Standard deviation of teacher

Tcal= t-test calculated

Table t-value=2.001

The analysis showed in the table 6 show that the t-calculated value 9 items 3,9,10,11,17,26,27,29 and 30 were greater than the t-table value 2.001 while 22 items 1,2,4,5,6,7,8,12,13,14,16,15,17,18,19,20,21,22,23,24,25,28 and 31 were the below the t-table value 2.001. Therefore, the null hypothesis was rejected for nine item, while the null hypothesis was accepted for 22 items, therefore there were significant difference for items rejected, while there was no significant difference for the item accepted in the mean rating of student and teacher on the level of student utilization of BBC tools and equipment.

4.4 Finding of the Study

1. The following are the principal of the study. They are arranged based on the research questions and hypothesis.

   The following tools, equipment and material were found adequate in Bida technical colleges.

   Chisel, chips, hammer, corner block, spade, pix axe, block and brick mould, slump cone, sieves, bucket and watering can.

The following tools and equipment are inadequate:

Brick towel, spirit level, plumb bulb, pix axe, block and brick mould, block hammer, builder square, sledge hammer, float wooden, spot board, steel rule, tilting machine, head pan, leveling instrument, leveling staff, mechanical vibrator.

2. The following tools and equipment are found adequate in kontagora technical colleges

   Brick towel, spirit level, plumb bulb, pix axe, block and brick mould, block hammer, builder square, sledge hammer, float wooden, spot board, steel rule, tilting machine, head pan, leveling instrument, leveling staff, mechanical vibrator.

   The following tools and equipment are inadequate:

   Block making machine, brick making machine, club hammer and ranging pole.

3. The following tool and equipment were found adequate in Minna technical college spirit level, plumb bulb, builder square, Chisel, chips, hammer, sledge hammer, line, corner block, float wooden sot board, measuring tape, steel rule, head pan, leveling instrument, leveling staff, slump cone.

   The following tools and equipment were found inadequate

   Brick trowel, spade, pix axe, tilting mixer, block and brick mould, mechanical vibrator, block making machine, brick making machine, club hammer, wheel barrow, digger and watering can.

4. The following tools, equipment and material were found adequate in technically college New Bussa , measuring tape, Block making machine, Slump cone, sieve, Ranging pole and bucket.

   The following tools, equipment were found inadequate, Brick trowel, Builder square, chisel, chip hammer, sledge hammer, line, corner block, spot board, pix axe, spade, steel rule, tilting mixer, head pan, block and brick mould, leveling

instrument, leveling staff, mechanical vibrator, brick making machine, club hammer, wheelbarrow, digger and watering can.

5. Students were competent in utilizing the following items; brick trowel, spirit level, plumb bulb, chisel, line, wooden float, spot board, spade, measuring tape, steel rule, head pan, block and brick mould, block making machine, leveling instrument, club hammer, sieves, ranging pole, bucket, wheelbarrow, digger and watering can. Students were not competent in utilizing the following; builders square, chips hammer, sledge hammer, corner board, pix axe, tilting mixer, mechanical vibrator, levelling staff, brick making machine and slump cone

4.5 Discussion of Findings.

The research found that out of the 31 items presented in four schools many of the items were found adequate in three colleges and little of the item were found inadequate while many items were found inadequate in one colleges and little were found adequate. The finding agrees with submission of Ibrahim Y and Ma'aji S (2001), noted that adequate workshop facilities are necessary for any learning to take place because facilities aid the instructor to communicate more effectively and the learner to learn more interestingly, meaningfully and permanently. This is also in consonance with the report of Onyejemeze (2001) whose stated that to optimize the performance under the best condition, instruction and teaching facilities are expected to be adequate and sufficiently provided with relevant instructional facilities. Amiola and Ibrahim (2012), stated that adequate tools and equipment are need for any quality and effective learning. Chado (2014) noted that good technology teacher without standard workshop; tools and equipment to work may find it difficult to impact the right type of knowledge to the student. The finding is also in agreement with opinion of Odukwe (2001) who said that the standard of

education is falling not only in terms of curriculum but also in terms of tools, equipment and materials, machines and other facilities that are not available, Onyegegbu (2001), Umar and Abdullah (2010), stated that the unavailability of tools and equipment, machines make teaching ineffective, time consuming and boring.

Table 3.5 and 3.6 revealed that student attitude towards utilization of BBC tools and equipment were not fully utilized. Awobudu(2000), noted that teachers utilization of tools and equipment for teaching in technical colleges facilitates learning and enhance students achievement, Ajayi (1998) who stated that the Nigeria education system has failed to inculcate the spirit of self-reliance recipient because there were no equipment in the institution and where they exist they were not fully utilized. The finding also in line with the opinion of Anaele (2001) that tools and equipment in Nigeria institution are under-utilized. The extensive utilization of BBC tools and equipment might be because non availability of tools and equipment might be because of non-availability of tools and equipment, BBC Educator's apathy on the uses of BBC tools and equipment in their teaching capability.

CHAPTER FIVE

5.0 SUMMARY, CONCLUSSION AND RECOMMMENDATIONS

5.1 Summary of the Study

Building technology program in Technical Colleges is aimed at producing craftsman who will be able to perform basic functions in Building Technology both private and public sectors (NBTE 2011). Building Technology is a skill oriented program whose graduates are expected to be self-employed or set up their business after graduation but rather than self-employed or set up business in the area they were trained many have turned to what is popularly known as OKADA operators while others becomes hawkers in the cities It has being observed that the objectives have not being achieved over the years. This is because the graduates of vocational technical education from technical Colleges, especially Building Technology still roam the street jobless. Some have become hawkers while other has turned to OKADA riders. Unemployment among youth appear to be shooting up the sky. This may be due to little or no skill acquired by the students during training in Technical colleges. The Consequences of joblessness among youth according to Oyedebo (2003) include Burglaries, robbery, psychological and financial stresses, fear, anxiety prostitution, drug addiction, poverty, hunger and diseases.

It is common observation that youth today do not want to work but want to become millionaires overnight. This has become a national issue, hence many youth have involved themselves in social vices such as armed robbery, kidnapping banalization of pipe lines and cultism, in order to use of their God given machine ten finger. These categories of people do not realize that there is dignity in labor. The reason is simply because they do not possess necessary skills in the area they were trained

and as a result they have no confidence in themselves to set up business. Good possession of relevant building skills that will enable Building Technology students start up business or become self-employed may reduce joblessness and social vices among them after graduation. Therefore, there is need for carrying out a study to determine the assessment of the availability and utilization of tools and equipment in BBC program in technical colleges in Niger state.

Specially, the study determines;

1. Identify the availability and utilization of tools, equipment and materials for teaching BBC in technical colleges in Niger State.
2. Assess the extent to which the tools, equipment and materials are utilized for teaching BBC in technical colleges in Niger State.
3. Identify the tools, equipment and materials for teaching BBC in technical colleges in Niger State

5.2 Implication of the Study

The finding of this study had implication for teachers of building technology department, curriculum developers and the government. Having found that instructional facilities have positives effect on students, the teachers will be forced to write relevant materials such as textbook and handout in order for student to read. The identified practical skills, teaching strategies and evaluation will be incorporated in to the curriculum of Building Technology by the curriculum planners and developers. In order to teach the identified practical skills effectively to student, adequate instructional materials must be supplied to schools by the government and employers of Building technology teachers. If the teaching and evaluation strategies identified by this study are used in teaching and evaluating

student of building technology in technical colleges, it could assist them in acquiring skills for employment after graduation.

5.3 Contribution to the Study

The response to survey conduct validate the hypothesis and the following contribution are expected from the study

1. The research provides a useful basic for any organization and institution to a develop standard and to assess the student knowledge in regards to their performance. This can be applicable to all level of institution.
2. It provides a frame work for developing a better way of assessing the availability of any materials needed in any field of study without compromising the reliability of any information needed
3. It provides a guided line for evaluation of tools and equipment and how it been utilized which is of the fundamental policy government should lay down to curtail the mismanagement of tools, equipment and material been provided by the government.
4. It provides a reference for various organization and institution for developing vision statement and for long term performance standard.
5. It provided a frame work and model for attaining the ultimate goal of the world awareness and hypothesis behind all what is going on around the world which aids sustainable growth development.
6. The study provides a frame work for discussion on the subject of BBC program which will enhance and create details awareness about the subject matter.

5.4 Conclusion

Based on the findings of the study, the following conclusions are drawn:

The absence of adequate and functional modern tools, equipment and material and lack of utilization of equipment needed for teaching BBC student is a contribution factor to the low performance and poor practical skills exhibited by BBC graduates. The desire to produce competent graduates to teach BBC program can only be achieved when the facilities in the institution are available, adequate and well utilized for the program as demanded by the curriculum. This study has shown that instructional facilities in most technical colleges in Niger state are inadequate and even the available ones are not often utilized for teaching and learning BBC. Hence the need for immediate provision of adequate instructional facilities and training and retraining of BBC teachers on the utilization of instructional facilities in order to meet the goal of building technology as stated by the National Board for Teaching Education NBTE

The effective utilization of instructional facilities in building technology in technical colleges is of paramount in the economic development of the society.

5.5 Recommendation

Based on the finding of the study, the following recommendations are made;

1. The skills identified in this study should be integrated in to the curriculum of Building Technology for training students in Technical colleges.
2. Workshop and seminars should be organizing for Building Technology teachers on current technologies/issues in Building Technology from time to time
3 BBC Teachers should endeavour to adopt identified teaching and evaluation strategies for training their students.

5.6 Suggestion for Further Research

The following are suggested for further research:

1. Similar studies should be carried out on effect of utilization of instructional facilities in teaching BBC.
2. A similar study should be conducted in other technical subject such as technical drawing, woodwork, electricity/electronics, automobile and building technology.

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