

**TECHNIQUES FOR IMPROVING THE PERFORMANCE OF
BRICKLAYING/BLOCKLAYING AND CONCRETING PRACTICE AMONG
STUDENTS IN NATIONAL BUSINESS AND TECHNICAL EXAMINATION
BOARD (NABTEB) IN NIGER STATE**

BY

UBAH CLETUS MADUABUCHUKWU

2007/1/28010BT

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

OCTOBER, 2012.

CERTIFICATION

I, UBAH CLETUS MADUABUCHUKWU with Matric No 2007/1/28010BT 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 degree of this or any other university

.....

Name

.....

Signature/Date

APPROVAL PAGE

This project has been read and approved as meeting the requirements for the award of B.tech. Degree in industrial and technology Education, Department of industrial and technology Education, school of science and science Education Federal university of technology Minna.

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Supervisor

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Signature and Date

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Head of Department

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Signature and Date

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External Examiner

.....

Signature and Date

DEDICATION

I dedicate this work to the Almighty GOD and my parents .Chief Peter Ubah and Chief
(Mrs) Douraty Ubah.

ACKNOWLEDGEMENT

I sincerely appreciate GOD Almighty for helping me cross over yet another hurdle in my educational pursuit; also my Project Supervisor in person of Mr C.O.Igwe who gave me all the concept and direction towards the completion of this research work, I want to appreciate the Head of Department Dr. Ohize ,Emmanuel Jose for the wonderful leadership role played in the realization of my dreams. I also want to appreciate the effort of my Project Co-ordinator Mr. Saba Tswana Moses for his assistance to the success of my entire project work, I want to appreciate the following Lecturers of Industrial and Technology Education Department for their contributions to my academic pursuit; Prof. Momoh, Gabriel Dada, Prof Salami Kazeem Adebayo, Dr .Ma'aji Shehu Abdullahi, Dr. Omozokpia Peter Augustine, Mal Abdul Bello Kagara, and Mal Audu Rufai. Thanks to my Project Reader for the correction made on my project.

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Abstract

This study was aimed to find out the techniques for improving the performance of bricklaying/block laying and concreting practice student in National Business and technical Examination (NABTEB) in Niger State. Specific purpose, to identify the level at which teacher qualification experience and teaching method affect the students performance, to find out the availability material resources in school workshops and its affect in student performance. Research design adopted was a descriptive surveying research. The area of study covers seven technical college in Niger state. The population of study comprises of 56 teachers and 560 students of bricklaying/blocklaying and concreting practice. Sample used was random sampling; three technical colleges were randomly selected. To draw out the relevant data for the study, three research questions and three hypothesis was formulated and tested at 0.05 level of significant. Data for the study were collected through the administration of questionnaire. Statistical, tools used frequency, count, mean, standard deviation and t-test. findings experience and qualified teachers are available in the teaching and learning of bricklaying/block laying and concreting practice trade, students perform better when the teacher make use of necessary instructional devices, student are expose to practical work in bricklaying/blocklaying and concreting practice. In conclusion, the researcher recommended the following: Government should provide funds for schools for the purchase necessary instructional materials, recruit only qualified and experience personnel. Also schools should always be supplied with necessary and relevant bricklaying/blocking and concreting practice textbooks. And finally the researcher recommended that there should always be material resources for teaching and learning.

CHAPTER 1

INTRODUCTION

Background of the Study

Bricklaying/Blocklaying And Concreting Practice is one of technical courses taught in technical colleges with the view to provide technical and vocational education to National business and technical examination board who would later seek employment in industry or continue their education in a polytechnic or university. Ozoro (2008) stated that bricklaying/block laying and concreting practice program is intended to produce competent bricklaying/block laying and concreting practices men with sound theoretical and practical skills that will avail them to carry out any bricklaying/block laying and concreting practice work. In reaction to the students poor performance on bricklaying/block laying and concreting is abundantly clear that we are not doing the job that we should do or can do in teaching the students to understand and use ideas from these fields.

According to Massam (1994), the children are falling behind; they are simply not world class learners when it comes to bricklaying/block laying and concreting, the future well-being of every nation and people depends not just on how well the student are educated generally, but on how well we educate them in bricklaying/block laying and concreting specifically. The economic situation indicates that there is the need to understand the importance of using science and technology to serve the nations interests, in development of any nation and also result to a breakthrough towards a purposeful development. This is in line with ozigi,(2007). The future of Nigeria as a nation will depend on a scientific and technological strength and advancement. This can only be implemented by improving the students' knowledge in their desired areas of study on the standard of technology education in our technical colleges.

Relating and experiencing are two strategies for enhancing student ability to learn new concepts in bricklaying/block laying and concreting practice. But knowing when and how to integrate these strategies in instruction is not simple. (Mohammed (1996) Teachers need research, collaboration, and excellent instructional materials to know when to activate familiar experiences and prior knowledge, when to design and orchestrate activities that help students constructs new knowledge for themselves, and when it is best to lecture.

Most teachers in building technology have natural tendencies to teach traditionally the way they were taught, the way their teachers were taught, and so on. Alabi (2006) Despite the dramatic transformations throughout our society over the last half-century, teaching methods in bricklaying/block laying and concreting practice classes have remained virtually unchanged. Classroom practice has still hardly begun to capitalize on the many dimensions of the learning process. In addition, teaching contextually in bricklaying/blocklaying and concreting practice is not easy it takes additional prep time and lots of hard work.

Though the development in technology has made tremendous changes in the way we live, as well as the demand of the Society. Onl(2000) Recognizing the impact of new technologies on bricklaying/blocklaying and concreting practice technology, Teachers education institution try to restructure their educational programme and classroom facilities , in order to enhance the teaching and learning of technology courses. Adeshina,(2008) This restructuring process requires effective integration of technologies into existing context in order to provide teacher with knowledge of specific subjects areas, to promote meaningful learning and to enhance professional productivity in bricklaying/blocklaying and concreting practice

Therefore, teachers must be motivated to devote the additional time and effort required to try the strategies and to persist when they encounter obstacles and difficulties. We have seen many teachers in building technology and other fields of education become highly motivated when they try a new strategy, experience success, and see positive changes in their students' level of engagement. Fafunwa , .(2008)We have found that motivation and successful implementation of contextual teaching in bricklaying/blocklaying and concreting practice and learning are usually the result of a gradual approach to change that combines long term professional development, mentoring, collaboration with peers, practice, and reflection. Research shows that guided discovery and scaffold inquiry are much more effective for learning than open ended discovery Scaffolding is support provided by a teacher to make sure students succeed at a complex task they couldn't do otherwise.

Students learn as they go about the task, rather than before they start in bricklaying/blocklaying and concreting practice. The technology of traditional earth construction has undergone considerable developments that have enhanced earth's durability and quality as a construction material for low-cost buildings, Okoro (1993). Buildings made from earth materials can be a way towards sustainable management of the earth's resources. They can be put in place using simple machinery and human energy. Earth buildings avoid high-energy costs in the initial manufacturing and construction period, in their use as homes, and eventually in their recycling process.Latina(1994) Thus, it is not surprising that many people value earth construction for the above reasons for their durability .Folayan, (2007) and for the following qualities,

The principal reason for using earth is its excellent sustainability characteristics. These include, the efficient use of finite resources, minimizing pollution and waste and low carbon emissions especially in industrial countries (Little and Morton, 2001). In

comparison with other materials, adobe and rammed earth, buildings reflect the embodied energy required for the production and use of various materials. In comparison to brick and concrete, adobe bricks have the less embodied energy (Andrew, 2006)

It is on this view that needs to undertake this study became necessary. It is therefore obvious to study the factor that influences the performance of student in this subject. Factor like students' interest in the learning, student' motivation in learning, examination anxiety, and teachers' attitudes to teaching of bricklaying/blocklaying and concreting practice with the hope that, the findings of the study could be adequate to develop and promote the knowledge of bricklaying/blocklaying and concreting practice in technical colleges. The National Business and Technical Examination Board (NABTEB) came into existences in 1992 with degree NO.70 which was signed into the law in August 1993(Aminu, 2006).

1. The Board (NABTEB) was charged with the following responsibilities
2. To take over the examination conduct in Nigeria by the Examinationhitherto conductedin Nigeria by the Royal Society of Art in London (R..S.A) City and Guild of London Institute (C and G) and the West African Examination council (Technical).
3. To conduct examination leading to the award of the National technical certificate (N. T. C.), National business certificate (N.B.C.), Advance National Business certificate (A.N.B.C.) and Advanced Business technical certificate (A.N.T.C.).

To conduct entrance examination into colleges of technical and allied institutions

1995, the National Technical Certificate (N.T.C.) and National Business Certificate (N.B.C) examination, replaced the WAEC (Technical) and WAEC (Business)examination were conducted for the first time by NABTEB and the examination were based on both National Board for Technical Education (N.B.T.E.) and WAEC technical/Business

syllabus, among the technology trade based on National Board for Technical education modular curriculum syllabus is Bricklaying/blocklaying and concreting practice course. bricklaying/blocklaying and concreting practice is one of the major technology course offered in vocational and technical institution in Nigeria. According to Ozoro (1982) teachers, parent and Educators need to synergize together so as to guarantee qualitative education to the learners.

Statement of the Problem

It has been observed that student's interest in bricklaying/blocklaying and concreting practice is very low compared to other general subject, according to the Niger state science and technical school board in (2005) stated that, the assessment of learning and teaching of bricklaying/blocklaying and concreting practice course in Niger state becomes necessary. According to Selman Yakubu (2010) Building student performance in previous NABTEB examination of ,2008,2009,2010,and 2011 academic sessions showed that only 19 percent, 14 percent, 32 percent, and 24percent of the student passed in bricklaying/blocklaying and concreting practice course respectively with the result above, the gap between the bricklaying/blocklaying and concreting practice course and general subjects is wide and to bridge the gap, this research intends to investigate the causes of such failure of students and other factors that might be responsible for the lows performance of bricklaying/blocklaying and concreting practice students in the NABTEB examination.

Purpose of the Study

The purpose of the study is to identify techniques for improving the performance of bricklaying/blocklaying and concreting practice students in National Business and Technical Examination (NABTEB) in Niger state. The specific purposes are,

1. To identify the level at which teacher qualification, experience and teaching methods affects the student's performance.
2. To find out the availability of material resources in school workshops and its effects in students performance.
3. To determine ways of improving the performance of bricklaying/blocklaying and concreting practice students in NABTEB examination.

Significance of the Study

The study when completed will be useful to the teachers in technical colleges, National teacher institute (NTI), Nigeria Association of teachers of technology (NATT), and the students of technical colleges.

This study will enable the technology teachers to make use of bricklaying/blocklaying and concreting practice in teaching the students so also increase their skills and knowledge of learning. The study will be significant to education technologist in developing teachers competence of every level of education system. Benefit, the study in the sense that it will provide the bricklaying/blocklaying and concreting practice need that will enhance technical college teachers

This study will enable national teacher institute(NTI) to make use of bricklaying/blocklaying and concreting practice and in organize there members from difference state,Benefit, this study will benefit than in the sense that it will provide the bricklaying/blocklaying and concreting practice need that will enhance national teacher Institute ,traning and retraining of members.

This study will enable the Nigeria association of teachers of technology(NATT) to make use of bricklaying/blocklaying and concreting practice in organize there members from difference country.Benefit,it will provide ways of job traning and organization of workshops/conferences.

This study will enable the student to participate in bricklaying/blocklaying and concreting practice and also increase their skills, knowledge and learning process .Benefit, it enable the student to take full advance of bricklaying/blocklaying and concreting practice technology which is necessary for effective learning, it facilitate the learning process.

Scope of the Study

This study is delimited to NABTEB student in technical colleges of Niger State in using techniques for improving the performance of bricklaying/blocklaying and concreting practice student in National Business and Technical Examination Board Niger State.

Assumption of the Study

The following assumptions were made in the study:

1. The schools under study would be sufficient to obtain relevant data necessary for answering questions and the hypothesis formulated to guide the study.
2. The students of the school under study were considering proper to provide valid information that will give authentic data for this research work.
3. The teachers involved adhered to each strategy, that is in providing true and honest information regarding and learning situation in the classroom/workshop and adequacy of the teaching material/facilities, equipment and tool.

Research Question

1. How do the qualification, experience, and teaching method of Building technology teacher affects the performance of student in
2. NABTEB examination?
3. What are the available material resources in school workshops and its effects on students performance?

4. What are the ways of improving the performance of Building students in NABTEB Examination?

Hypothesis

The following null hypothesis is formulated and tested at 0.05 level of significance

H₀₁. There is no significant difference on the responses of the students and the teachers on How the qualification, experience, and teaching methods of building technology teachers affects the performances of students in NABTEB examination.

H₀₂. There is no significance difference between the response of the teachers and that of the students on availability of material resources in the student's workshop.

H₀₃. There is no significant different between the response of the students and teachers on the ways of improving the performance of building students in NABTEB examination.

CHAPTER II

REVIEW OF RELATED LITERATURE

In this chapter, literature related to this study is reviewed and it is discussed under items:

1. Qualification and experience
2. Factors affecting students' performance.
3. Methods of teaching technical subjects.
4. The role of material resources in teaching and learning in technical colleges.
5. Ways of improving the performance of bricklaying/
6. Blocklaying and concreting practice students in final examinations.
7. Summary of literature reviewed.

Qualification and Experience

Experience-based learning (experimental learning) is that the experience of the learner occupies central place in all considerations of teaching and learning. Blocky (1998) This experience may comprise earlier events in the life of the learner, current life events, or those arising from the learner's participation in activities implemented by teachers and facilitators. A key element of experience-based learning (henceforth referred to as EBL) is that learners analyse their experience by reflecting, evaluating and reconstructing it (sometimes individually, sometimes collectively, sometimes both) in order to draw meaning from it in the light of prior experience.

This review of their experience may lead to further action. Cohen and Waker (1993) All learning necessarily involves experience of some sort, prior and/or current. However,

scrutiny of many contemporary teaching and training practices might lead one to think otherwise. Much of the impetus for EBL has been a reaction against an approach to which is overly didactic, teacher controlled and involving a discipline-constrained transmission of knowledge.

Thus far, only a small body of research exists, however, that links specific teacher qualifications to student achievement. The lack of research is due primarily to the scarcity of data that link student test scores to the characteristics of their teachers. Furthermore, although scholars and policymakers agree that children's early school and family experiences are pivotal, relatively little research exists on the effects of teachers on the educational outcomes of young children.

Factors Affecting Students Performance

Determinants of students' performance have been the subject of ongoing debate among educators, academics, and policy makers. There have been many studies that sought to examine this issue and the findings of these studies point out to hard work and discipline, previous schooling, parents' education, family income and self motivation as factors that can explain differences in students' grades. Aremu, (2002) As a result of this there need for qualified trained teacher to handle the teaching of technical courses in our technical colleges. Measuring of academic performance of students is challenging since student performance is product of socio-economic, psychological and environmental factors. For the last 20 years, education in Nigeria is growing as a profitable industry with prime objective of maximizing profit by delivering high quality building craft Education that produces well-educated, skilled, mannered students according to needs and requirements of the dynamically growing market. That's why the scope of research is always there to find out what are the factors that affect the performance of the students.

There are two groups of students as generally perceived that is those who improve and those who don't improve.

This study can contribute to find out the factors, which are responsible for student's inelastic behavior towards study along with identifying those factors, which help a student to make progress in his studies. The findings of research studies focused that student performance is affected by different factors such as learning abilities because new paradigm about learning assumes that all students can and should learn at higher levels but it should not be considered as constraint because there are other factors like race, gender, sex that can affect student's performance. (Hansen, Joe 2000). Some of the researchers even tried to explain the link between students' achievements, economic circumstances and the risk of becoming a drop-out that proved to be positive McDill, Levin, Chansarkar and Mishaeloudis (2001), explained the effects of age, qualification distance from learning place etc. on student performance.

Yvonne Beaumont Walters, kola soyibo,(1998) further elaborated that student performance is very much dependent on SEB (socio economic back ground) as per their statement, collage students level of performance is with significant differences, linked to their gender, grade level, school location, school type, student type and socio-economic background (SEB). Kirby, Winston (2002) focused on student's impatience (his time-discount behavior) that influences his own academic performance. Goethe found out that weak students do better when grouped with other weak Students. There are often different results by gender, as in Hoxby's K-12 results (2000); Sacerdote (2001) finds that grades are higher when students have unusually academically strong room mates. The results of Zimmerman (1999, 2001) were somewhat contradictory to Goethe results but again it proved that students performance depends on number of different factors, it says that weak peers might reduce the grades of middling or strong students.

The presence of qualified man power brings about growth. The performance of students on the module is not affected by such factors as age, sex and place of residence but is associated with qualification in quantitative subjects. It is also found that those who live near the University perform better than other students. Therefore, whenever they are in short supply and sub-standard, the institution or organization cannot achieve the set goals. It is clear that, the entire success and failure of educational system is based largely on teachers and any unqualified one in the sector is already a failure. Nzelem (2004) remarked that the quality of teaching staff is the most important determinant of educational standard at all levels. Therefore, unqualified teacher have little or nothing to offer in imparting any reasonable knowledge and skills. If these qualities are lacking material resources even though available, they can be judiciously utilized. Professionalism presently is emphasized in teaching and is highly advocated. This tends to agree with Williams (2005) who emphasized that 'Technology teachers must have adequate professional knowledge, competence and experience, he must also be competent in his spoken English to enable him carry out his teaching very well. This indicates that a professional teacher must be able to express himself very well to be successful in his profession.

The staffing of technical institution demands a high level man power resources and this can only be attained through training and retraining of teachers should act as guide and monitor the students' activities to process not only knowledge but qualitative knowledge. They should be able to identify appropriate materials and equipment that need to be related to the student. Another factor that always affects the performance of student to be captured by the teacher. He should avoid monotony, Provide plenty of interesting, educative activities for his students, and remove the causes of in-attention among his students. In this way, attention will be aroused, Interest sustained and learning will take place in a

pleasurable way. Failure to conduct formative evaluation to find out how student are coping up with learning can also affect the performance of student.

Formative evaluation is an assessment of students' performance at the early stages of the course of programme. It influences instructional objectives, course content and teaching methods by revealing areas where students are weak and by exposing ineffective teaching methods (Mohammed, 2009).Formative evaluation also encourages students to learn by revealing to them the progress they are making .students who are not doing well may be induced by the result of a test to making. Students who are not doing well may be induced by the results of a test to make greater effort in order to achieve success. Learning activities that are above the learner also affect the students' performance. Okoro (2009) stated that, it is very important in technical education that appropriate procedure be used in the development of a course of study. He continued by saying that, if wrong procedures are used, the course of study may end up not serving the purpose for which it was developed and the educational programme will not achieve its intended goal of effective technical education.

He also added that teachers must be ready to perform a task that can go unappreciated. Nworgu (1993) found that class attendance is reflected significantly on the students' GPA. Anderson and Benjamin (1994) found that the most important factors that affect students' performance in university introductory economics course were the overall achievement level and taking a course in calculus. With regard to gender, they found that male students outperform their female counterpart. Alfthan, T (1994) concluded in their survey article that the research on the factors affecting students' performance in economics points out to student's aptitude as the most important determinant of learning. Study effort, age of student, and a good match between student learning style and instructor's teaching style all have positive effect on student's performance .

Christopher, J (1995) found that memory and note-taking affect learning in the introductory courses in economics. Devadoss and Foltz (1996) studied the effects of previous GPA, class attendance and financial status on the performance of students of some agriculture economics related courses. They concluded that previous GPA and motivation affect positively the current GPA. They also found that students who support themselves financially are likely to have better performance. Zimmer and Fuller (1996) in their survey article of the factors affecting students' performance in statistics found that statistics anxiety and attitude, and computer experience are linked to students' performance in statistics courses. Elliset (1998) in their study on the factors affecting student performance in principles of economics, found that the likelihood of a student making a grade of A or B significantly decreases as the number of absences increases; when the student is a member of fraternity or sorority; and as the number of credit hours carried by the student during the semester increases. On the other hand, the chance of a student making an A or B in the course significantly increases with having taken a calculus course; a higher GPA; and higher SAT scores. Lane and Porch (2002) studied the factors affecting students. He also added that teachers must be ready to perform a task that can go unappreciated.

Method of Teaching Technical Subject

A careful designed teaching method can make learning effective. Okoro (1991) stressed that, for effective teaching to take place, skilled teacher need to use different teaching methods and techniques at his disposal. Although there are many different methods of teaching technical subjects, there is no one of them that can be regarded as the best. He continued that engineering and technology graduates are better taught by involving them in the teaching and learning process. He further observed that, technology teachers should employ methods whereby students participate actively i.e. demonstration

which is commonly used to teach fundamental operation in industrial arts, this method help he teacher to explain the step involved in a lesson or an operation while teaching. As any good teacher knows, all students do not learn in the same way.

According to okoro (1991) it is common for a class of students to be at a variety of levels in any particular subject. Teachers need to use different teaching methods in order to reach all students effectively. A variety of teaching strategies, knowledge of student levels, and an implementation of which strategies are best for particular students can help teachers to know which teaching methods will be most effective for their class. The first step to choosing a teachingmethod is to assess the students. This assessment can be formal or informal. Formal assessments include standardized tests, tests from the textbook or curriculum being used, or teacher-created tests. These assessments can give you an idea of the previous instruction that the students have received as well as their academic level.

The students in your class may have undergone various teaching methods and quality of instruction in previous years. One should note that a person's world view is involved in each of these levels. If teacher and students believe that knowledge is constructed, rather than being "found" out there in the world, then this class would be more comfortable with transactional curricula, and conceptual and experiential models. If teacher and students believe the primary role of the school is for people to learn to get along, then that class would be comfortable with a co-operative model. The Saskatchewan science curricula are transactional, firmly planted in constructivist learning theory, and conceptually oriented. Okoro (1991) opined that, many different teaching methods can be adopted in technical education and as such teachers should select the method that is most appropriate for the topic or skill he wants to teach .He also said that , the following methods can be used in teaching.

1. Demonstration method

2. Project method
3. Assignment method
4. Experiment
5. Field trips
6. Guest lecture
7. Discovery method.

Above are the fundamental teaching methods which receive special consideration. It is evident that, it would not be necessary or even desirable to confine a teaching situation to the use of only one method, basic elements of several of these approaches may appropriately be combined for best results depending upon the age of the student and the type of subject matter being taught, the skillful teacher will use these methods in such relation and combination as will be indicated by existing needs. Demonstration method of teaching is the most definite and valuable mean of instruction for operation type of lessons. It continues to be so whenever it is desirable to have student to learn an exact and acceptable procedure in technical operations. Its success is based on that fact that, imitation, the repetition of an operation is an important factor in such learning experience.

He continued that, in demonstration, students see immediate progress as a result of their effort, also their desire is aroused to emulate the work of the teacher and others. Demonstration then is probably the teacher's greatest aid in training students in fundamental skills and practices in the shortest possible time. It may well be said that, for the average school shop/laboratory, the quality and quantity of work produced will depend greatly the teacher's use of demonstration. Project method of teaching is a co-operative study of a real life situation or situation by either a class or the whole school usually under the expert guidance of a teacher (Bello, 2008). In project method, the students participate in the planning of the intended project, i.e. Listing the major steps in doing the project,

making needed sketches, listing the tools, equipment and materials required and state the procedure to be adopted in the assembly of the project. The construction of a project requires the student to apply the knowledge and skills he has learnt in the course. In electricity, wood work, metal work and building technology, construction of a project enable the student to make practical use of the equipment available in the workshop. It consolidates his knowledge of theoretical information and helps him develop practical skills. Project allows for individualization of instruction. When students are engaged in individual project, each student is able to work at his own rate and receives any necessary assistance from teacher.

According to Okoro (1998) he stated that, assignments may be performed in a classroom, workshop or home and may involve written or practical work. He continues that, in workshop or laboratory. Assignment may require students to consult specified books or reference material; the method may require students to visit institutions and industries in order to learn more. Home assignment may involve the collection of objects. Field trip relates what students learn in school with what actually obtains in the world of work. It enables students to study industrial process first hand and to see relevance of laboratory and shop practical. Before students are taken on a field trip, they are told the purpose of the trip, they are supposed to observe and what they are expected to learn. After the trip, the teacher with the students discuss the experience of the trip and the various things learnt, this makes the field trip learning experience rather than mere site seeing.

Field trips fall under the category of teaching strategy because of the high potential for hands-on learning for the participants. While many see field trips as a fun day away from school, the fun has a greater purpose. Gagne (2006) Children are able to see the concepts learned in class work in the real world. Creating a strong connection for the students between the field trip and classroom study increases the educational value of the

activity. Create a set of learning objectives for the field trip, relating them back to specific areas of the **curriculum**. Clue the students into the connection before the field trip takes place. Some field trips offer obvious connections to the curriculum while others might be more subtle. Upon returning to the classroom, the experiences on the trip provide additional educational material. If a particular industrial establishment is to be visited, Nworgu, (1995) it is proper to write to the management to inform them of the intended visit. Plan classroom activities to extend the learning of the field trips. In preparation for the field trip, have the students research the venue and provide pictures or background information for them. Encourage the kids to prepare questions to ask the tour guide at the location. This ensures that an employee of the establishment will beat hand to receive the students and take them round the establishment. After the visit, it is proper to write to the management of the industry for providing students with the opportunity to observe the facilities and the processes undertaken in the industry.

Experiment assist student to learn because it enables them to verify rules, relationship and laws. A side note here: obviously, when trying out experiments, you don't want your students to feel like experimental subjects. Olaitan (2002), Fortunately, in my experience, most students like it when professors try new things: they interpret this as a sign that the professor cares about them, and they've taken enough bad courses that they believe that there's lots of room for improvement. Some researchers consider that an important advantage which experiments have over, say, observational techniques is the random assignment of research participants to experimental conditions. This helps to reduce the problems of analysis caused by systematic differences between people.

Bello,(2008) Other psychologists, however, argue that grouping people together in this way, and trying to cancel out individual differences so that we only look at a group

norm, is limited in how much it can tell us because it ignores what is special about people. Mainly because of the above limitations psychologists are increasingly more likely to use other non-experimental methods - and in particular more qualitative methods. So as long as you're careful to monitor how well things are going, and to solicit their opinions about what works and what doesn't, you'll probably be pleasantly surprised at how well your efforts are received. If you're trying out something new, chances are you don't know exactly how it will play out in class; this will be much more true for your students.

So it's important to think in as much detail as you can about how you expect something to work out. Don't just think and now group work will happen, or now a wonderful class discussion will happen; instead, think about specific behavior that you expect to occur doing group work or during the discussion, and what the signs would be that the method is functioning as you'd like. Andrew (2008) Then compare what you envision with the actual class. If the actual class isn't going as well as you'd envisioned, think about how the reality doesn't match with your vision, and think about ways in which you can steer the class towards more productive behavior. (Gentle nudging often suffices: after all, your students want class to be productive too, they just might need some help.) Also, sometimes the actual class diverges from your vision in positive ways: look out for those, and try to incorporate them into your vision.

Guest lecture is another method used in teaching technical subjects. In this method, experts of various technical areas are invited to give talks to student. A fire fighter may be invited to give a talk on fire fighting and the safety methods that may be adopted in the event of fire outbreak. Other professionals can equally be invited to give talk to students in their field of specialization. Christopher (1995) Guest lectures provide variety of the teaching situation and simulate the interest of students. Students have the opportunity to interact with people who are actually engaged in various occupations. Student may obtain

valuable information which they could not obtain from book or even from their teachers. It should therefore be noted that, methods are tools in the teacher's hand and not masters. Like any other tool, one method that proved successful with one group of students may not be too successful with another. When this happens, there is need to change to other approaches from among the tools.

The delivery method is another method or ways to teach information or content. If the content is a process, providing the students with the result and having them figure out what happened leads to a different sort of learning than doing it the other way around. More critical thinking (analysis and synthesis) are required when the discovery method is used. Nigerians study from materials downloaded from the Internet. Reading is an attempt to absorb the thought of the author and know what the author is conveying. Study habits and skills are particularly important for college students, whose needs include time management, note-taking, Internet skill, the elimination of distractions, and assigning a high priority to study.

Fafunwa, A.B (1990) states that good study habits help the student in critical reflection in skills outcomes such as selecting, analyzing, critiquing, and synthesizing. Nneji (2002) states that study habits are learning tendencies that enable students work private. Nigerians study from materials downloaded from the Internet. Reading is an attempt to absorb the thought of the author and know what the author is conveying (Agibi 2008). Studying is the interpretation of reading materials. Study habits and skills are particularly important for college students, whose needs include time management, note taking, Internet skill, the elimination of distractions, and assigning a high priority. The study conducted by Hope L. Graven (2008) on the relationship between an individual's amount of caffeine consumption during his/her study session and the individual's study habits showed that the main effect of drinking caffeine on exam preparation was not

significant The study conducted by Hope L. Graven (2008) on the relationship between an individual's amount of caffeine consumption during his/her study session and the individual's study habits showed that the main effect of drinking caffeine on exam preparation was not significant

The Role of Material Resources in Teaching and Learning in Technical Colleges

Material resources refer to all items used for teaching in technical colleges in both practical and theoretical lessons. This includes machines, equipment, tools, materials, workshop/laboratory classroom etc. It has been discovered that many nations of the world more that ever before, had recognized the necessity of providing functional education for their youth, and when such an intention have been developed, then there is need for provision of necessary and relevant instructional materials. Okories, (1993) observed that, shortage of tools; equipment and material for effective teaching of technical education have tend to cause in occupational habits and skills of the learners. Abdullah, (2004) carried out a research on the factors effecting teaching technical subjects in kogi state. In his findings, he stated that, there were no adequate workshop/laboratories, no enough tools and equipments for proper teaching of these technical subjects. These had actually gone a long way in affecting the small scale industries and even the so-called larger industries.

Learning which leads to the acquisition of manipulative skills in technical education usually in a workshop/laboratory, as such the influence and role of these towards students attitudes have a great role to play. Materials make good and great contribution to learning and teaching. They make teaching and learning more makes interesting and simplified like electronic material such as projectors, radio, tapes, video tape, recordings and even printing material like posters and charts, pamphlets, magazines, bulletins and text books.

The Advantages

1. Reduce verbalism while teaching
2. Provide perpetual uniformity
3. Provide realism
4. Add interest
5. Improve comprehension
6. Motivate activity

The Disadvantages:

1. Consumes more (excessive) time
2. Technical assistance usually unavailable especially when the equipment break-down.
3. Create laziness in students.

Ways of Improving The Performance of Building Technology Students In Final Examination.

National Policy on Education (2004 revised) stated that, technical education is designed to provide for an individual recipient knowledge and vocational skills necessary to promote commercial and economic development; as well as imparting necessary skill to individual who shall be self reliant economically. Though long before nineteenth century and even before the advent of the colonial masters, people in Nigeria had developed their own indigenous technology. This they applied in construction of buildings by using their natural resources such as wood, mud, clay, stones, animal dung's, leaves etc. tool were also constructed by using convenient material like stones. For effectiveness to be attained in brick laying/block laying and concreting practice, students have to be presented with necessary tools and equipment and also be involved in practical to broaden their knowledge and comprehension of the subject.

The problem with many of today's schools is of course that they had their cornerstones laid in the late 19th or early 20th centuries, or they stem from the baby boom years that followed World War II. Most of them are not well adapted to the requirements of the modern educational system, and this has been the case for quite some time – due to the lack of funding. Now, however, it seems that times are changing on a large scale. As part

of the vast stimulus packages presented by governments worldwide to counter the recessionary effects of the financial crisis, and fuelled by today's heightened focus on environmental issues, funds are being made more readily available for initiatives and investments. examples of such political drives. With a rising politics will improve the educational environment and the increasing availability of funds, society can look forward to a giant leap in educational performance.

Determining the performance requirements of the job for which student are being trained. Identifying skills and knowledge required to meet examination standard. Specifying the terminal behavioral performance of student upon completion of the course. Listing the instructional techniques to be used in attaining stated objectives. Selecting appropriate instructional material for the students. Preparing suitable test that measures the measures the expected behavior out-come of student. Series of evaluation according to salami (2006) will ensure that, the teacher get prompt feed back on the level of understanding of the building technology by the student. As we look to the future and the formative years of coming generations, a holistic approach to the educational environment must be taken one that comprises teaching curricula and pedagogies but also the learning environment as such. By building the smarter schools of the future today, we can profit from short-term gains in cost and resource allocations while building a wholesome future for our children in the long term. A future that stimulates their knowledge and abilities, as well as one that safeguards their health and the environment of the world they live in. This Will enable the teacher to provide a remedial teaching to the level up or to cover that area where student comprehension seems to be lacking. To this end, student understanding is complemented and cloudy areas are clarified.

Okoro (2004) stated that, concrete materials used in the process of teaching tend to remain permanent in student /learner and he always remembers when ever he comes across

such a situation. Therefore for a student to perform creditably in his final examination, teachers should use adequate teaching methods and techniques, they should right tools, equipment and material that will suit the learners and there should be regular conduct of determine level of assimilation of the learners. Creating a peaceful environment in schools is of course a perpetual issue, and most of the answer lies in people and processes such as anti-bullying initiatives. But technology can lend a helping hand. Access-control and surveillance systems can both monitor and deter. And entrance systems can log a pupil's presence in the school, a feature appreciated by parents.

Summary of Literature Reviewed

In the literature reviewed, the factors that affected students' performance has been discussed and possible solutions have also been suggested .Methods and techniques to be used in teaching technical subjects have also been looked into, as that have been able to tell us that, no any method of teaching is superior than any other but how an individual use the methods is what matters most. The role of material resources has also been examined stressing that all methods and techniques can be used in the process of teaching but without materials the teaching will not be effective Also, the way of improving the performance of building technology student in the final examination were enumerated with that such measures will lead to an improvement in attainment of good performance in their final examination.

CHAPTER III

METHODOLOGY

This chapter dealt with research design, area of study, population of the study, sample and sampling techniques, instrument for data collection, validation of the instrument, administration of the instrument and methods of data analysis.

Research Design

The research design adopted was a descriptive surveying research. It involved the use of questionnaire to collect necessary information/data from student and teacher in order to find out ways of improving the performance of bricklaying/blocklaying and concreting practice student in national business and technical examination (NABTEB) in Niger state.

Area of the Study

The area of study covered seven technical colleges in Niger state. Niger state is located in the central part of Nigeria and shares borders with Kebbi state to the North West, Kaduna state to the north, Kogi state to the south and to the south-East lies Federal capital territory (F.C.T).

Population of the Study

The population of this study comprised of teachers and students of bricklaying/blocklaying and concreting practice in seven (7) technical colleges in Niger state (fifty six teachers and five hundred and sixty students).

Sample and Sampling Techniques

Random sampling was adopted for the study. eight (8) teachers and eighty (80) students were randomly selected from each of the three (3) schools as listed below:

1. Government technical college Minna
2. Government technical college Eyagi, Bida

3. Government technical college Kontagora.

	G.T.C Minna	G.T.C Kontagora	G.T.C Eyagi
Teachers	8	8	8
Students	80	80	80
Total	88	88	88

The instrument used for data collection of study was structured questionnaire. The questionnaire is design for bricklaying/blocking concreting practice teachers and students of the four (4) technical colleges in Niger state. The questionnaire was divided into two. Section one (1) contained personal data of respondents. Section two (2) contained thirty two (41) item and had three (three) parts. part A contain seven (12) item which sought the information on the qualification, experience and attitudes of teacher toward the teaching of technology course. Part B contains sixteen (16) items which dealt with the importance of material resources in the workshops and their effects on students' performance. Part C contains nine (13) items which dealt with the ways of improving the performance of bricklaying/blocklaying and concreting practice student in NABTEB examination.

Each respondent was expected to tick the column that best suit him/her opinion on the statement on each item. The categories of responses were:

- SA - Strongly Agreed
- A - Agreed
- D - Disagreed
- SD - Strongly disagreed

Validation of the Instrument

The instrument was validated by three (3) lecturers in the Department of Industrial and Technology Education (I. T. E.) their observations were strictly noted.

Administration of the Instrument

The instrument was personally administered to the respondents by the researcher and after the completion the collection was done by the researcher immediately.

Method of Data Analysis

In order to analyze the data collected, the researcher used frequency count, mean, standard deviation and t-test. The four point rating scale was used i.e.

Strongly Agree	-	SA	=	4
Agree	-	A	=	3
Disagree	-	D	=	2
Strongly Disagree	-	SD	=	1

Decision rule

To determine the acceptance, a mean score of 2.50 was chosen as a cut off mark, in order words any item with mean response of 2.50 and above was considered agreed upon by the respondents, while items with less than 2.50 was considered disagreed upon by the respondents. For testing hypothesis ± 1.96 was chosen as t-critical value based on 318 degree of freedom. Hence, any item that has its calculated t-less than or equal to t-critical was regarded as not significant, while item that has calculated t-greater than t-critical was regarded as significant.

CHAPTER IV

PRESENTATION AND DATA ANALYSIS

This chapter deals with the presentation and analysis of data with respect to the research questions formulated for this study, the result of this data analysis for the research questions are presented as follows.

Research Question 1

How does the qualification, experience and teaching methods of building technology teachers affects the performance of students in NABTEB examination?

Table 2: the mean responses of the student and teachers on the qualification, experience and teaching methods of building technology teachers affects the performance of students in NABTEB examination.

N₁=240,

N₂=24

S/N	ITEMS	X ₁	X ₂	X _t	Remarks
1	Experienced and qualified teachers are available in the teaching and learning of bricklaying/blocklaying and concreting practice	3.15	3.17	3.16	Agreed
2	Students are expose to bricklaying/blocklaying and concreting practice practical skills	3.10	3.08	3.09	Agreed
3	Seminars and workshop are organized by the school teachers to update the students knowledge	2.95	3.25	3.10	Agreed
4	Students are allowed to ask questions.	2.90	3.33	3.12	Agreed
5	The teaching method adopted by the teachers are favorable to the students.	3.05	3.00	3.03	Agreed
6	Teachers demonstrate competency in building technology and manipulative skill.	3.20	3.58	3.39	Agreed
7	Teachers use the right equipments, tools, and machines when teaching.	3.30	2.75	3.03	Agreed
8	Teacher supervise the student practical work effectively.	3.15	3.08	3.12	Agreed
9	Teacher use the correct technical terms to teach the students.	3.15	3.33	3.24	Agreed
10	The teacher teach the students bearing in mind the individuals difference	3.45	3.50	3.48	Agreed
11	Students are allow through under conducive environment	1.85	2.00	1.93	Disagreed
12	Test or exercise are given to students at the end of every lesson.	2.15	1.92	2.04	Disagreed

Key

N1 = Numbers of student

N2= Numbers of teachers

X = Mean of student

X2 = Mean of teachers

Xt = Average mean of student and teachers

The data presented in table three revealed that the respondents agree with all the items with mean score ranging between 3.03-3.48 and low disagree with the items on 11 and 12 with mean score of 1.93-2.04.

Research Question 2

What is the available material resources in school workshop and its effect on performance

Table 3: the mean responses of the student and teachers on the available material resources in school workshop and its effect on performance

S/N	ITEMS	X ₁	X ₂	X _t	Remarks
13	The school workshop is equipped with adequate equipment,tools and machines	2.15	1.67	1.91	Disagreed
14	Appropriate textbook are available in school liberally	3.23	3.17	3.20	Agreed
15	Instructional materials are readily available in the school.	2.15	1.92	2.04	Disagreed
16	Teacher allow students to use equipments, tools and machines when needed.	3.25	3.50	3.38	Agreed
17	The available instructional materials are always put to use in the teaching process	3.25	3.33	3.29	Agreed
18	Available textbook are relevant to the students.	2.05	2.08	2.07	Disagreed
19	Teachers always engage the students in the use of instructional materials	2.15	2.00	2.08	Disagreed
20	the available machines are not put into use	3.15	3.42	3.29	Agreed
21	The machine are difficult to operate	3.30	3.50	3.40	Agreed
22	Available machines, tools and equipments are damage.	3.35	3.42	3.39	Agreed
23	The use of machines, equipments, and tools result to better performances of the students in building technology.	3.25	3.17	3.21	Agreed
24	Tool and equipment are always put to use when student have workshop practical's.	3.15	3.42	3.29	Agreed
25		3.35	3.17	3.26	Agreed
26	The Equipment/Machine in the Workshop are obsolete.	3.15	3.42	3.29	Agreed
27	The Program me is equipped with modern instructional materials like over-head projector.	3.05	3.33	3.19	Agreed
28	Building Technology teachers always attend to student for theory and practical lessons. The school is not properly funded and also lack sophisticated machines, or equipments.	3.10	3.08	3.09	Agreed

The data presented in table three revealed that the respondents agree with all the items with mean score ranging between 3.09-3.40 and low disagree with the items on 13, 15, 18 and 19 with mean score of 1.91-2.08.

Research Question 3

What are the ways of improving the performance of building technology students in NABTEB examination

Table 4: the mean responses of students and teachers on the ways of improving the performance of building technology students in NABTEB examination

S/N	ITEMS	X ₁	X ₂	X _t	Remarks
29	There is need in increase the time allotted to building technology practical's	3.15	3.58	3.37	Agreed
30	There is need to send students on industrial training	3.30	3.33	3.32	Agreed
31	Bricklaying/blocklaying and concreting practice technology courses are allotted more time than general educational courses.	3.25	3.33	3.29	Agreed
32	Series of education should be conducted during lesson	3.30	3.17	3.24	Agreed
33	Much emphasize should be laid on practical aspects than theory	3.05	3.33	3.19	Agreed
34	Different technology techniques and methods need to be used by the teachers	2.90	3.50	3.20	Agreed
35	Necessary tools equipment and materials should be used in the process of teaching	3.05	3.17	3.11	Agreed
36	Tests that will measure both, cognitive, psychomotor, and affective domain should always be carried out	3.35	3.42	3.39	Agreed
37	Extra- mural classes should be organized by the building technology teachers	3.15	3.42	3.29	Agreed
38	Selecting appropriate instructional material for the students	3.05	3.58	3.32	Agreed
39	Specifying the terminal behavioural performance of student upon completion of the course	3.15	3.33	3.24	Agreed
40	Identifying skills and knowledge required to meet examination standard	2.90	3.42	3.16	Agreed
41	Preparing suitable tests that measures the expected behavioural outcome of students	3.30	3.67	3.49	Agreed

The data presented in table four revealed that the respondents agreed with all the items with mean score ranging between 3.11-3.49

Hypothesis I

There is no significant difference on the responses of the students and the teachers on How the qualification, experience, and teaching methods of building technology teachers affects the performances of students in NABTEB examination.

Table 5: t- test analysis of student and teachers regarding the qualification, experience, and teaching methods of building technology teachers affects the performances of students in NABTEB examination.

N1 = 240
= 24

N2

S/N	ITEMS	X ₁	X ₂	SD ₁	SD ₂	T-cal	Remarks
1	Experienced and qualified teachers are available in the teaching and learning of bricklaying/blocking and concreting practice trade	3.15	3.17	1.01	3.17	-0.03	NS
2	Students are expose to bricklaying/blocklaying and concreting practice	3.10	3.08	0.99	3.08	0.03	NS
3	Teaching staff are sponsored for seminars and workshop to update their knowledge and Skills	2.95	3.25	1.07	3.25	-0.41	NS
4	Academic staff are encouraged to go for further training.	2.90	3.33	1.04	3.33	-0.57	NS
5	Building technology head of department is given an opportunity to interview applicants before employment.	3.05	3.00	0.97	3.00	0.07	NS
6	New teachers and supporting staff are giving orientation on workshop management, school , policies and procedure	3.20	3.58	0.98	3.58	-0.47	NS
7	Bricklaying/blocklaying and concreting practice teachers are adequately enumerated.	3.30	2.75	0.84	2.75	0.88	NS
8	Student are expose to practical work in bricklaying/blocklaying and concreting practice	3.15	3.08	0.96	3.08	0.10	NS
9	It provide condusive environment for teachers and student	3.15	3.33	0.85	3.33	-0.24	NS
10	Affective supervision of school programme	3.45	3.50	0.59	3.50	-0.06	NS
11	Student are expose to moder building equipment tools and machines	1.85	2.00	1.01	2.00	-0.32	NS
12	Student are always demonstrate what they have learn in the class	2.15	1.92	1.06	1.92	0.51	NS

Key

N1 = Numbers of students

N2 = Numbers of teachers

S.D1= standard deviation of students

S.D2 = standard deviation of teachers

t= t-test value of students and teachers

S= Significant.

NS= Not significant.

The analysis in table 5: showed that the t-cal values of all the twelve 12 items were below the t-cal value which is ± 1.96 . Therefore, the null hypothesis was accepted for each of the 12 items. This implies that there is no significant difference for the items accepted in the mean ratings of students and teachers concerning the qualification, experience and teaching methods of building technology teachers affects the performance of students in NABTEB examination

Hypothesis II

There is no significance difference between the response of the teachers and that of the students on availability of material resources in the student's workshop.

Table 6: t- test analysis of students and teachers regarding the availability of material resources in the student's workshop.

N1 = 240

N2 =24

S/N	ITEMS	X ₁	X ₂	SD ₁	SD ₂	T-cal	Remarks
13	Teachers perform better when they are well equipped with the necessary instructional materials and facilities	2.15	1.67	1.06	1.67	1.21	NS
14	Students perform better when the teacher make use of necessary instructional devices	3.23	3.17	0.89	3.17	0.08	NS
15	Lack of appropriate building technology textbooks affects the students performance	2.15	1.92	1.11	1.92	0.51	NS
16	There are availability of fund for the purchase of materials for practicals	3.25	3.50	0.89	3.50	-0.32	NS
17	The available instructional materials are always put to use in the teaching process	3.25	3.33	0.83	3.33	-0.11	NS
18	The classrooms are enough for the students	2.05	2.08	1.02	2.08	-0.06	NS
19	Teachers always engage the students in the use of instructional materials	2.15	2.00	1.06	2.00	0.32	NS
20	Assignments are given at the end of every lesson	3.15	3.42	0.85	3.42	-0.35	NS
21	There is no building technology shop in the college	3.30	3.50	0.84	3.50	-0.25	NS
22	Student lack interest in the building technology because of teachers method of teaching	3.35	3.42	0.79	3.42	-0.09	NS
23	There is lack of tools and equipment for building technology courses	3.25	3.17	0.83	3.17	0.11	NS
24	Workshop attendants are available in the building technology department to assist the students when the need arises	3.15	3.42	0.96	3.42	-0.35	NS
25	Tools and Equipment are always put to use when student have workshop practicals.	3.35	3.17	0.65	3.17	0.25	NS
26	The Equipment / Machine in the Workshop are obsolete.	3.15	3.42	0.85	3.42	-0.35	NS
27	The Programme is equipped with modern instructional materials like over-head projector.	3.05	3.33	0.97	3.33	-0.37	NS
28	Building Technology teachers always attend to student for theory and practical lessons.	3.10	3.08	0.94	3.08	0.03	NS

The analysis in table 6: showed that the t-cal values of all the sixteen 16 items were below the t-cal value which is ± 1.96 . Therefore, the null hypothesis was accepted for each of the 16 items. This implies that there is no significant difference for the items accepted in the mean ratings of students and teachers concerning the available material resources in school workshop and its effect on performance.

Hypothesis III

There is no significant different between the response of the students and teachers on the ways of improving the performance of building students in NABTEB examination.

Table 7: t- test analysis of students and teachers regarding the ways of improving the performance of building students in NABTEB examination.

N1 = 240

N2 = 24

S/N	ITEMS	X ₁	X ₂	SD ₁	SD ₂	T-cal	Remarks
29	There is need in increase the time allotted to building technology practicals	3.15	3.58	1.01	3.58	-0.53	NS
30	There is need to send students on industrial training	3.30	3.33	0.84	3.33	-0.04	NS
31	General education courses are allotted more time than building technology	3.25	3.33	0.83	3.33	-0.11	NS
32	Series of education should be conducted during lesson	3.30	3.17	0.71	3.17	0.18	NS
33	Much emphasize should be laid on practical aspects than theoretical	3.05	3.33	0.97	3.33	-0.37	NS
34	Different technology techniques and methods need to be used by the teachers	2.90	3.50	1.04	3.50	-0.76	NS
35	Necessary tools equipment and materials should be used in the process of teaching	3.05	3.17	0.97	3.17	-0.17	NS
36	Tests that will measure both, cognitive, psychomotor, and affective domain should always be carried out	3.35	3.42	0.79	3.42	-0.09	NS
37	Extra- mural classes should be organized by the building technology teachers	3.15	3.42	0.96	3.42	-0.35	NS
38	Selecting appropriate instructional material for the students	3.05	3.58	0.97	3.58	-0.65	NS
39	Specifying the terminal behavioural performance of student upon completion of the course	3.15	3.33	0.85	3.33	-0.24	NS
40	Identifying skills and knowledge required to meet examination standard	2.90	3.42	1.04	3.42	-0.67	NS
41	Preparing suitable tests that measures the expected behavioural outcome of students	3.30	3.67	0.78	3.67	-0.45	NS

The analysis in table 7: showed that the t-cal values of all the thirteen 13 items were below the t-cal value which is ± 1.96 . Therefore, the null hypothesis was accepted for each of the 13 items. This implies that there is no significant difference for the items accepted in the mean ratings of students and teachers concerning the ways of improving the performance of building technology students in NABTEB examination

Findings

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

Findings related to the

1. Experienced and qualified teachers are available in the teaching and learning of bricklaying/blocklaying and concreting practice trade.
2. Students are expose to bricklaying/blocklaying and concreting practice.
3. New teachers and supporting staff are giving orientation on workshop management, school , policies and procedure.
4. Student are expose to practical work in bricklaying/blocklaying and concreting practice.

Findings related to the

1. Students perform better when the teacher make use of necessary instructional devices.
2. There are availability of fund for the purchase of materials for bricklaying/block laying and concreting practices.
3. The available instructional materials are always put to use in the teaching process.
4. Workshop attendants are available in the building technology department to assist the students when the need arises.

Findings related to the

1. Much emphasize should be laid on practical aspects than theoretical.
2. General education courses are allotted more time than building technology.

3. Tests that will measure both, cognitive, psychomotor, and affective domain should always be carried out.
4. Selecting appropriate instructional material for the students

Discussion of the Findings

The discussion of the findings are based on the research questions raised for the study.

Findings from table indicated that experienced and qualified teachers are available in the teaching and learning of bricklaying/blocklaying and concreting practice trade. This is in line with Olaitan, (2006) who observe that one of the major factors that affect the student performance is lack of qualified and experienced teacher. As a result of this there need for qualified trained teacher to handle the teaching of technical courses in our technical colleges. Measuring of academic performance of students is challenging since student performance is product of socio-economic, psychological and environmental factors. For the last 20 years, education in Nigeria is growing as a profitable industry with prime objective of maximizing profit by delivering high quality bricklaying/blocklaying and concreting practice Education that produces well-educated, skilled, mannered students according to needs and requirements of the dynamically growing market. That's why the scope of research is always there to find out what are the factors that affect the performance of the students. There are two groups of students as generally perceived that is those who improve and those who don't improve.

The findings also indicated that students are expose to bricklaying/blocklaying and concreting practice. In a study of college students who are in building class and want to take another economics course, Nzelum, (1996) found that there is a link between the perceived usefulness of an additional course in building and the performance of the

students in a current economics course. The findings revealed that new teachers and supporting staff are giving orientation on workshop management, school, policies and procedure. This is in line with Nzelum (1993) remarked that the quality of teaching staff is the most important determinant of educational standard at all levels. Therefore, unqualified teacher have little or nothing to offer in imparting any reasonable knowledge and skills. If these qualities are lacking material resources even though available, they can be judiciously utilized. He also said that 'only very small percentages of Nigeria teachers are qualified in school system. Professionalism presently is emphasized in teaching and is highly advocated. This tends to agree with Williams (2005) who emphasized that 'Technology teachers must have adequate professional knowledge, competence and experience, he must also be competent in his spoken English to enable him carry out his teaching very well. This indicates that a professional teacher must be able to express himself very well to be successful in his profession.

The study also revealed that student are expose to practical work in bricklaying/blocklaying and concreting practice. Who said in project method, the students participate in the planning of the intended project, Listing the major steps in doing the project, making needed sketches, listing the tools, equipment and materials required and state the procedure to be adopted in the assembly of the project. The construction of a project requires the student to apply the knowledge and skills he has learnt in the course. In electricity, wood work, metal work and building technology, construction of a project enable the student to make practical us of the equipment available in the workshop. It consolidates his knowledge of theoretical information and helps him develop practical skills. Project allows for individualization of instruction. When students are engage in individual project, each student is able to work at his own rate and receives any necessary assistance from teacher.

Findings from table 2 indicated that students perform better when the teacher make use of necessary instructional devices. Formative evaluation is an assessment of students' performance at the early stages of the course of programme. It influences instructional objectives, course content and teaching methods by revealing areas where students are weak and by exposing ineffective teaching methods (Mohammed, 2009).Formative evaluation also encourages students to learn by revealing to them the progress they are making. Students who are not doing well may be induced by the result of a test to making. Students who are not doing well may be induced by the results of a test to make greater effort in order to achieve success. Learning activities that are above the learner also affect the students' performance. This is also in agreement with Okoro (1991) who stated that, it is very important in technical education that appropriate procedure be used in the development of a course of study. He continued by saying that, if wrong procedures are used, the course of study may end up not serving the purpose for which it was developed and the educational programme will not achieve its intended goal of effective technical education.

Findings also indicated that there are availability of fund for the purchase of materials for bricklaying/blocklaying and concreting practices. Okories, (1993) observed that, shortage of tools; equipment and material for effective teaching of technical education have tended to cause in occupational habits and skills of the learners. Abdullah, (2004) carried out a research on the factors effecting teaching technical subjects in kogi state. In his findings, he stated that, there were no adequate workshop/laboratories, no enough tools and equipments for proper teaching of these technical subjects. These had actually gone a long way in affecting the small scale industries and even the so-called larger industries.

The findings also revealed that the available instructional materials are always put to use in the teaching process. The presence of qualified man power brings about growth.

The performance of students on the module is not affected by such factors as age, sex and place of residence but is associated with qualification in quantitative subjects. Therefore, whenever they are in short supply and sub-standard, the institution or organization cannot achieve the set goals. It is clear that, the entire success and failure of educational system is based largely on teachers and any unqualified one in the sector is already a failure.

Findings from table 3 revealed that much emphasize should be laid on practical aspects than theoretical this is in line with Aina, O.(2009), He also added that teachers must be ready to perform a task that can go unappreciated. Romer (1993) found that class attendance is reflected significantly on the students' GPA. Anderson and Benjamin (1994) found that the most important factors that affect students' performance in university introductory economics course were the overall achievement level and taking a course in calculus. With regard to gender, they found that male students outperform their female counterpart. Kennedy and Tay (1994) concluded in their survey article that the research on the factors affecting students' performance in economics points out to student's aptitude as the most important determinant of learning. Study effort, age of student, and a good match between student learning style and instructor's teaching style all have positive effect on student's performance .

Findings also revealed that, tests that will measure both, cognitive, psychomotor, and affective domain should always be carried out. Lane and Porch (2002) studied the factors affecting students. Nwana (2008) lamented that a teacher have a major role in educational development whether he approached his work actively or passively he can influence development adversely. He also added that teachers must be ready to perform a task that can go unappreciated. A careful designed teaching method can make learning effective. Okoro (1991) stressed that, for effective teaching to take place, skilled teacher need to use different teaching methods and techniques at his disposal. Although there are

many different methods of teaching technical subjects, there is no one of them that can be regarded as the best. He continued that engineering and technology graduates are better taught by involving them in the teaching and learning process. He further observed that, technology teachers should employ methods whereby students participate actively i.e. demonstration which is commonly used to teach fundamental operation in industrial arts, this method help he teacher to explain the step involved in a lesson or an operation while teaching. As any good teacher knows, all students do not learn in the same way.

Okoro (1991) opined that, many different teaching methods can be adopted in technical education and as such teachers should select the method that is most appropriate for the topic or skill he wants to teach .He also said that, the following methods can be used in teaching.

8. Demonstration method 9. Project method 10. Assignment method 11. Experiment 12. Field trips 13. Guest lecture 14. Discovery method.

The findings also indicated that selecting appropriate instructional material for the students this is in line with Fafunwa (1990) recommended that, one out of every two teachers in higher school should be a graduate. The staffing of technical institution demands a high level man power resources and this can only be attained through training and retraining of teachers should act as guide and monitor the students' activities to process not only knowledge but qualitative knowledge. They should be able to identify appropriate materials and equipment that need to be related to the student. Another factor that always affects the performance of student to be captured by the teacher .Anina (2006) said that the teacher must observe four things i.e. in his teaching, he should proceed from the known to unknown, He should avoid monotony, Provide plenty of interesting, educative activities for his students, and remove the causes of in-attention among his students. In this way, attention will be aroused, Interest sustained and learning will take

place in a pleasurable way. Failure to conduct formative evaluation to find out how student are coping up with learning can also affect the performance of student.

CHAPTER V

SUMMARY, CONCLUSION AND RECOMMENDATION

This chapter deals with Summary of procedure used, educational implication of the study, findings of the study, conclusion, recommendation and suggestion for further research.

Summary of the Study

The research work was designed to assess the techniques for improving the performance of bricklaying/blocklaying and concreting practice student's National Business and Technical Examination in Niger state. Research questions were formulated which focuses on how qualification, experience of teachers and also the method used by bricklaying/blocklaying and concreting practice teachers affect the performance of the students in NABTEB examination.

It also drew attention on the availability of material resources in school workshop and their effect on student performance. Ways for improving the performance of bricklaying/blocklaying and concreting practice students in NABTAB examination was also an area of concern.

The instrument for data collection was questionnaire; the item on which the hypothesis was formulated was based on research questions . The research questions were administered to bricklaying/blocklaying and concreting practice teachers and students in technical colleges in Niger State. A total of 56 teachers and 560 students of bricklaying/blocklaying and concreting practice in seven technical colleges served as respondents.

The statistical tools used in the analysis were frequency count, mean, standard deviation and t-test.

Implication of the Study

The findings of this study have the following education implications on the techniques for improving the performance of bricklaying/blocklaying and concreting practice students in National Business and Technical Examination Board (NABTEB) in Niger State.

The findings showed that training tools, machines, equipments and facilities in the department were inadequate and also the libraries had no relevant books which these will have serious effect on the quality of technical students produced in any educational system.

The finding also revealed that there is lack of fund for the purchase of materials for building technology practical. The importance of finance cannot be emphasized because without that, on any educational program we can be successfully implemented.

The findings also revealed that the time allotted for practical is not enough. The implication of this is that the students will lack practical skills in building technology course but with more time allotted to practical the student will adequately be skilled practically.

The findings showed that the building technology employees were not adequately remunerated and the implication here is that if these personnel are not adequately taken care of in terms of remuneration definitely they would not be motivated in putting in their best.

Conclusion

Following conclusion was drawn based on the findings of this study. Technical colleges should be provided with functional building technology workshops. The provision of supporting staff should be made available so that they will be helping both the teacher and student when they are carrying out their functions. Bricklaying/blocklaying and concreting practice staff should be sponsored for seminars and workshops so as it

update their knowledge and skills, functional tools, equipment and libraries should be made available for the students so as to have comfortable avenue for learning. various modern instructional aids like computers, over-head projectors should be used in order to improve the pace of learning. different methods of teaching like demonstration method, project method, assignments and others should be used so that student would be able to have better understanding.

Recommendations

Based on the study, the following are recommended:

1. Government should provide funds for schools for the purchase of necessary instructional materials.
2. Government should always recruit only qualified and experienced personnel.
3. Where there are no instructional materials, teachers can improvise by making use of available materials, teachers can improvise by making use of available material
4. Series of evaluation in teaching process should always be conducted.
5. School libraries should always be supplied with necessary and relevant bricklaying/blocklaying and concreting practice textbooks, journals, magazines, bulletins, pamphlet etc.
6. Career programme can be organized by inviting professional in the field of bricklaying/blocklaying and concreting practice to come and enlighten students in bricklaying/blocklaying and concreting practice.
7. Refresher courses, workshops and seminar should be organized from time to time for building craft teachers and supporting staff by professional bodies.
8. Time allotted for practical lessons should be increased.
9. Government should seek for foreign aid to support building technology courses.

Suggestion for Further Study

The following suggestions were made for further research:

1. The influence of functional workshop and equipment on the performance of students in bricklaying/blocklaying and concreting practice course.
2. Strategies for solving the problem of negative attitudes of students in bricklaying/blocklaying and concreting practice programme.

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APPENDIX II

FEDERAL UNIVERSITY OF TECHNOLOGY, MINNA

DEPARTMENT OF INDUSTRIAL AND TECHNOLOGY EDUCATION.

QUESTIONNAIRE ON THE TECHNIQUES FOR IMPROVING THE PERFORMANCE OF BRICKLAYING/BLOCK LAYING AND CONCRETING PRACTICE STUDENTS IN NATIONAL BUSINESS AND TECHNICAL EXAMINATION (NABTEB) IN NIGER STATE.

INSTRUCTIONS

Please sincerely respond by filling or ticking [] the appropriate space provided. The information shall be treated with confidentiality.

NOTE:All the sections will be answered by the teachers except Section B which should be answered by both the students and teachers.

Personal Data

1. Name of School _____

2. Educational qualification

M.Sc M.Ed B.Sc tech

B.Ed HND NCE OND

Others (Please Specify) _____

3. Years of teaching experience

(i) 1-10 years 0

years and above

Key

Strongly Agree = SA

Agree = A

Disagree = D

Strong Disagree = SD

TEACHERS QUESTIONNAIRE

- A. How does the qualification, experience and teaching methods of building technology teachers affects the performance of students in NABTEB examination?

ITEM	STATEMENTS	RESPONSES			
		SA	A	D	SD
1	Experienced and qualified teachers are available in the teaching and learning of bricklaying/block laying and concreting practice trade				
2	Students are expose to bricklaying/block laying and concreting practice				
3	Teaching staff are sponsored for seminars and workshop to update their knowledge and Skills				
4	Academic staff are encouraged to go for further training.				
5	Building technology head of department is given an opportunity to interview applicants before employment.				
6	New teachers and supporting staff are giving orientation on workshop management, school , policies and procedure				

7	Bricklaying/block laying and concreting practice teachers are adequately enumerated.				
8	Student are expose to practical work in bricklaying/block laying and concreting practice				
9	It provide conducive environment for teachers and student				
10	Affective supervision of school programme				
11	Student are expose to moder building equipment tools and machines				
12	Student are always demonstrate what they have learn in the class				

B. What is the available material resources in school workshop and its effect on performance?

ITEM	STATEMENT S	RESPONSES			
		SA	A	D	SD
13	Teachers perform better when they are well equipped with the necessary instructional materials and facilities				
14	Students perform better when the teacher make use of necessary instructional devices				
15	Lack of appropriate building technology textbooks affects the students performance				
16	There are availability of fund for the purchase of materials for bricklaying/block laying and concreting practice				
17	The available instructional materials are always put to use in the teaching process				
18	The classrooms are enough for the students				

19	Teachers always engage the students in the use of instructional materials				
20	Assignments are given at the end of every lesson				
21	There is no building technology shop in the college				
22	Student lack interest in the building technology because of teachers method of teaching				
23	There is lack of tools and equipment for building technology courses				
24	Workshop attendants are available in the building technology department to assist the students when the need arises				
25	Tools and Equipment are always put to use when student have workshop practicals.				
26	The Equipment / Machine in the Workshop are obsolete.				
27	The Programme is equipped with modern instructional materials like over-head projector.				
28	Building Technology teachers always attend to student for theory and practical lessons.				

C. What are the ways of improving the performance of building technology students in NABTEB examination

ITEM	STATEMENTS	RESPONSES			
		SA	A	D	SD
29	There is need in increase the time allotted to building technology practicals				
30	There is need to send students on industrial training				
31	General education courses are allotted more time than building technology				
32	Series of education should be conducted during				

	lesson				
33	Much emphasize should be laid on theoretical aspects than practicals				
34	Different technology techniques and methods need to be used by the teachers				
35	Necessary tools equipment and materials should be used in the process of teaching				
36	Tests that will measure both, cognitive, psychomotor, and affective domain should always be carried out				
37	Extra- mural classes should be organized by the building technology teachers				
38	Selecting appropriate instructional material for the students				
39	Specifying the terminal behavioural performance of student upon completion of the course				
40	Identifying skills and knowledge required to meet examination standard				
41	Preparing suitable tests that measures the expected behavioural outcome of students				

APPENDIX III

FORMULA

$$\text{Mean } X = \frac{\sum fx}{\sum f}$$

X = Mean

Σ = The sum of

X = The Score

F = The Frequency of each point in the scale

Standard Deviation

$$SD = \sqrt{\frac{\sum f(x - \bar{x})^2}{\sum f}}$$

X = Mean

Σ = The Sum of

X = The Score

F = The Frequency

t – test formula

$$t - \text{test} = \frac{X_1 - X_2}{\dots}$$

$$\sqrt{S_1^2 + \frac{S_1^2}{N_1}}$$

$$N_1 \quad N_2$$

X_1 = Mean Score of Workshop Supervisors

X_2 = Mean Score of Master Craftsmen

S_1^2 = Variance of Workshop Supervisors

S_2^2 = Variance of Master Craftsmen

N_1 = Number of Workshop Supervisors

N_2 = Number of Master Craftsmen

Hypothesis 1, item 1, Standard deviation for Workshop Supervisors responses.

X	F	FX	$x - \bar{x}$	$(x - \bar{x})^2$	$F(x - \bar{x})^2$
4	30	120	0.85	0,72	7.225
3	20	60	-0.15	0.02	0.113
2	6	12	-1.15	1.32	3.968
1	4	4	-2.15	4.62	9.245
	$\Sigma f = 60$	$\Sigma fx = 196$			$\Sigma f(x - \bar{x})^2 = 20.550$

$$X_2 = \frac{\Sigma fx}{\Sigma f} = \frac{196}{60} = 3.27$$

$$\Sigma f = 60$$

$$S_2^2 = \frac{\sum f(x - \bar{x})^2}{\sum f} = \frac{20.55}{60} = 0.34$$

$$\frac{\sum f}{60}$$

$$SD_2 = \sqrt{\frac{\sum f(x - \bar{x})^2}{\sum f}} = \sqrt{\frac{20.55}{60}} = \sqrt{0.34} = 0.59$$

$$\frac{\sum f}{60}$$

Hypothesis 1, item 1, Standard Deviation for Master Craftsmen

X	F	FX	x - \bar{x}	(x - \bar{x}) ²	F (x - \bar{x}) ²
4	9	36	0.88	0.689	4.133
3	7	21	-0.17	0.029	0.087
2	3	6	-1.17	1.368	2.7378
1	1	1	-2.17	4.709	4.70890
	$\sum f = 20$	$\sum fx = 64$			$\sum f(x - \bar{x})^2 = 11.667$

$$X_1 = \frac{\sum fx}{\sum f} = \frac{64}{20} = 3.20$$

$$\sum f = 20$$

$$S_1^2 = \frac{\sum f(x - \bar{x})^2}{\sum f} = \frac{11.67}{20} = 0.58$$

$$\frac{\sum f}{20}$$

$$SD_1 = \sqrt{\frac{\sum f(x - \bar{x})^2}{\sum f}} = \sqrt{\frac{11.67}{20}} = \sqrt{0.58} = 0.76$$

$$\frac{\sum f}{20}$$

t – Calculated =

$$\frac{X_1 - X_2}{\sqrt{\frac{S_1^2}{N_1} + \frac{S_2^2}{N_2}}}$$

N_1 N_2

$$= \frac{3.27 - 3.20}{\sqrt{\frac{0.59}{60} + \frac{0.76}{20}}}$$

$$\frac{0.07}{\sqrt{0.0058 + 0.0289}} = \frac{0.07}{\sqrt{0.0347}} = \frac{0.07}{0.19} = 0.38$$

$$\frac{0.07}{\sqrt{0.0058 + 0.0289}} = \frac{0.07}{\sqrt{0.0347}} = \frac{0.07}{0.19} = 0.38$$