

## STRATEGIES FOR ENHANCING SKILLS ACQUISITION IN BLOCK LAYING, BRICKLAYING AND CONCRETING STUDENTS IN TECHNICAL COLLEGES IN KANO STATE

<sup>1</sup>Murtala Musa, <sup>2</sup>Yahaya Ibn Salihu, PhD, <sup>1</sup>Habibu Idris, <sup>1</sup>Sani Umar,

<sup>1</sup>Sale Nimrod Kamo

<sup>1</sup>Department of Building Technology, School of Secondary Education Technical, Federal College of Education (Tech) Bichi, P.M.B. 3473, Kano, Nigeria.

<sup>2</sup>Department of Wood Work Technology, School of Technical Education, Federal College of Education Gidan-Madi, Sokoto State. Email: [Murtalamusa080@gmail.com](mailto:Murtalamusa080@gmail.com)

### Abstract

*The study was carried out to determine strategies for Enhancing skills acquisition of Blocklaying, Bricklaying and Concreting students in Technical Colleges in Kano, Nigeria. Survey research design was used for the study. The population for the study was 28 block laying, bricklaying and concreting teachers in technical colleges. Structure questionnaire was used as instruments for data collection. Three research questions were formulated. Cronbach alpha method was used for the reliability of the instrument which yielded a coefficient of 0.83. Mean was used to analyze the data for answering research questions while t- test was used to test the hypotheses of no significant difference at 0.05 levels of significances. Recommendation: The strategies identified in this study should be integrated into the curriculum of block laying, bricklaying and concreting for training students in Technical Colleges, Workshop and seminars should be organized for Brick/Block-laying and concreting teachers on current technologies/issues in Brick/Block-laying and concreting from time to time, Teachers of block laying, bricklaying and concreting should endeavor to adopt identified teaching and evaluation strategies for training their students and Training equipment, machines and books should be donated to schools offering Brick/Block-laying and concreting by government and employers of labor in order to teach skills to students.*

**Keywords:** Enhancing Skill Acquisition, Brick/Block-laying and Concreting, Technical Colleges.

### Introduction

Technical Colleges are post primary institutions where students are giving full vocational training that will enable them acquire relevant knowledge, skills and attitude for paid or self-employment in various occupations in the world of work. Technical Colleges in the opinion of Okoro (2016) are principal vocational institutions in Nigeria which are designed to prepare the individual to acquire practical skills, knowledge and attitude required of craftsmen and technicians at sub-professional level. Technical Colleges admit Junior Secondary School leavers and provide them with a full vocational course for three years. The National Board for Technical Education (2019) reported that the quality of academic programmes in Technical Colleges is regulated by NBTE's curriculum development, supervision and periodic accreditation visits while the National Business and Technical Examinations Board (NABTEB) is responsible for the examination and certification of the occupational trades leading to the award of National Technical Certificate (NTC) and Advance National Technical Certificate (ANTC). The trades offered in the Technical Colleges include; Beauty Culture Trades, Computer Craft Practice, Electrical Engineering Trades,

Wood Trades; Printing Trades, Textile Trades, Hospitality, Mechanical Trades; Metalwork Trade and Building Trades

Block laying, Bricklaying and Concreting is an aspect of vocational technical education. Vocational technical education is an education for work. According to Uwaifor (2009) vocational technical education is any form of education whose purpose is to prepare person(s) for employment in an occupation or group of occupations. Adeyemi and Uko –Aviomoh (2004) viewed vocational technical education as an aspect of education which leads to the acquisition of practical and applied skills. Skills according to Wikipedia (2009) are the learned capacities to carry out pre-determined results often with minimum outlay of time and energy skills involve the ability to do something well. Skill according to Okorie (2006) is a manual dexterity through repetitive performance of an operation. It is well established habits of doing things by the people. Skills could be gained through experience and training on skills development (Bakare, 2006). Skill acquisition according to Donli (2004) is the manifestation of idea and knowledge through training which is geared towards instilling in individuals the spirit of

entrepreneurship need for meaningful development. According to Okorie (2000) skills are attained when procedural instructions are matched with performance activities. For skills to be attained there must be opportunities for participation and practice of such skills under real life situation. Olaitan (2006) stated that the attainment of skills prepares students for vocational occupations. Skills attainment remains the major goal of vocational technical education and this helps to satisfy the personal work needs of both the individual and the society (Aliozor, 2004). To attain skills in vocational technical education programmes such as Blocklaying, Bricklaying and Concreting at technical college level, opportunities must be provided for students to practice the skills they are taught in an environment that is relevant to the job skills learnt. Such opportunities that should be provided that may improve skills attainment of Blocklaying, Bricklaying and Concreting students include field trip/excursion, allocation of more time for practical work, production unit, provision of materials to practice with.

Without enhancing building skills, graduates of Block laying, Bricklaying and Concreting can never be functional in the society. Building skills are teachable skills. They can only be attained when relevant materials, tools and equipment are available for teaching. Relevant tools and equipment enhance practical teaching and learning process. Qualities of instructions offered to the students depend on the teaching strategies employed. The process of offering quality instructions to students involves the use of sophisticated tools, equipment and machines, delicate materials and complex methods of work. This now demands for skilled graduates to be involved in Block laying, Bricklaying and Concreting practices in the Kano state. Hence, it is imperative to determine strategies for Enhancing skills acquisition of Block laying, Bricklaying and Concreting students in technical colleges that will enable them to function effectively in Kano State.

#### **Statement of the Problem**

Block laying, Bricklaying and Concreting programme in technical colleges is aimed at producing skilled craftsmen who will be able to perform basic functions in Block laying, Bricklaying and Concreting both in private and public sector (NBTE, 2001). Block laying, Bricklaying and Concreting is a skills oriented programme whose graduates are expected to be self-employed or set – their businesses after graduation but rather than being self – employed or set up businesses in the area they were trained many have turned to what is popularly known today as “OKADA” operators while others become hawkers in cities. It has been observed that the objectives have not been achieved over the

years. This is because the graduates of vocational technical education from technical colleges, especially in Block laying, Bricklaying and Concreting, still roam the street jobless. Unemployment among youths appear to be shooting up the sky (Victor, 2006). This may be due to little or no skill acquired by the students during training in technical colleges. The consequences of joblessness among youths according to include burglaries, robbery, psychological and financial stresses, fear, anxiety, aggression, frustration, prostitution, drug addition, vagrancy, poverty, hunger and diseases. The technical and vocational skills teacher is expected to be able to deliver skills which match new technologies and practices in the industry as well deliver skills to the current and future workforce in a flexible manner and at a consistent level of quality. Hence, the need to revisit the existing methods of teaching, to ascertain if they are still effective in teaching of practical skills instructions in our technical and vocational institutions. The problem of this study therefore is what strategies are effective in teaching and learning of practical skills in our technical colleges? It is against this background that the researchers carried out this study to investigate the teaching strategies that are enhancing in teaching practical skills in technical and vocational education programme in Nigeria. Therefore, there is need for carrying out a study to determine strategies for enhancing skills acquisition of Block laying, Bricklaying and Concreting students in technical colleges that will enable them function effectively in Kano State.

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

The major purpose of this study is to determine the strategies for enhancing skill acquisition of Block laying, Bricklaying and Concreting students in technical colleges. Specifically; the study will determine;

1. Skills required in Block laying, Bricklaying and Concreting in technical colleges in Kano State
2. Strategies for teaching Block laying, Bricklaying and Concreting theory for enhancing skills acquisition of Block laying, Bricklaying and Concreting students in technical colleges in Kano State.
3. Strategies for teaching Block laying, Bricklaying and Concreting practical for enhancing skills acquisition of Block laying, Bricklaying and Concreting students in Kano State.

#### **Research Questions**

The following research questions are formulated to guide the study:

1. What are the Skills required by students in Block laying, Bricklaying and Concreting in Technical Colleges in Kano State?
2. What are the strategies for teaching Block laying, Bricklaying and Concreting theory for enhancing skills acquisition of Block laying, Bricklaying and Concreting students in Technical Colleges in Kano State?
3. What are the practical teaching strategies for teaching Block laying, Bricklaying and Concreting for enhancing students' skills acquisition of Block laying, Bricklaying and Concreting Technical Colleges in Kano State?

### Methodology

The study adopted a survey research design. A survey research design according to Ali (2006) is a descriptive study which uses sample of an investigation to document, describe and explain what is in existence or non-existence on the present status of phenomena

being investigated. Ali further stated that in survey study, views and facts are collected through questionnaire, interviews, among others, analyzed and used for answering research questions. The survey research design is suitable for this study since data will be collected through questionnaire from Block laying, Bricklaying and Concreting teachers on the strategies for enhancing skills acquisition of Block laying, Bricklaying and Concreting students in technical colleges of Kano State.

### Results

The results for this study was gathered from the research questions answered

#### Research Question 1

What are the skills required by students in Block laying, Bricklaying and Concreting in Technical Colleges in Kano State?

The data for answering research question 1 were presented in Table 1

**Table 1: Mean Responses of the Respondents on the Block laying, Bricklaying and Concreting Skills Required by Students in Technical Colleges in Kano State**

N = 41				
S/N	Item Statements	X	S.D	Remarks
1	Read and interpret Building plans	3.77	0.81	Agree
2	Choose appropriate foundation for a particular building	4.09	0.80	Agree
3	Determining correct foundation depth for a particular building	4.00	0.82	Agree
4	Determine the level of the building from the road using simple leveling instrument	3.83	0.82	Agree
5	Setting out of building using builder's square or 3:4:5 method	3.80	0.62	Agree
6	Excavating concrete foundation correctly	3.85	0.62	Agree
7	Determine the thickness of concrete foundation using pegs	3.81	0.79	Agree
8	Mixing of cement, sand and gravel plus water in their right proportion	3.54	0.96	Agree
9	Measure materials using head pan or wheel barrow	3.79	0.74	Agree
10	Ability to use hand to mix concrete and obtain uniform colour	3.51	0.80	Agree
11	Ability to use machine mixer to mix concrete	3.52	0.66	Agree
12	Placing concrete on foundation using head pans, wheel barrows or concrete hose	3.66	0.88	Agree
13	Compact concrete using rammer	3.64	0.89	Agree
14	Ability to handle Block laying, Bricklaying and Concreting tools	3.68	0.76	Agree
15	Ability of handle Block laying, Bricklaying and Concreting machines	3.58	0.75	Agree
16	Ability to plumb block walls using spirit level	3.61	0.75	Agree
17	Ability to plaster and render walls using trowel and stone rub	3.69	0.65	Agree
18	Level building using building lines and spirit level	3.64	0.90	Agree
19	Compact concrete using machine vibrator	3.54	0.68	Agree
20	Ability to level up building using basic levelling instruments such as datum level.	3.87	0.88	Agree
21	Ability to determine height of roof and its slope	3.96	0.94	Agree
22	Ability to design type of roof suitable for a particular building such as gable, pitch, lintel and German roof etc.	3.64	0.98	Agree

The data presented in Table 1 revealed that 22 Block laying, Bricklaying and Concreting skills have their mean value ranging from 3.51 to 4.09. This showed that the mean value of each item is above 3.50, indicating that all the 22 skills are required by students in technical colleges. The table also showed that the standard deviations (SD) of the items are within the range of 0.62 to 0.98. This indicated that the respondents were not very far from the mean or from one another in their responses.

### Research Question 2

What are the strategies for teaching Block laying, Bricklaying and Concreting theory for enhancing skills acquisition of Block laying, Bricklaying and Concreting students in technical colleges in Kano State?

The data for answering research question 2 were presented in Table 2

**Table 2: Mean Responses of the Respondents on the Strategies for Teaching Block laying, Bricklaying and Concreting Theory for Enhancing Skills Acquisition of Block laying, Bricklaying and Concreting Students in Technical Colleges in Kano State**

N = 41				
S/N	Item Statements	X	S.D	Remarks
23	Using students' centered teaching method for teaching Block laying, Bricklaying and Concreting	3.83	0.89	Agree
24	Giving tests or assignments to students at the end of lessons.	4.06	0.77	Agree
25	Grouping students to deliberate and find out innovations in Block laying, Bricklaying and Concreting	3.80	0.62	Agree
26	Applying reciprocal peer tutoring as teaching strategy for teaching theory in Block laying, Bricklaying and Concreting	3.90	0.97	Agree
27	Using intelligent students to teach other students some building concepts.	3.51	0.63	Agree
28	Varying teaching styles, techniques or methods from time to time during lessons.	3.58	0.81	Agree
29	Visiting Block laying, Bricklaying and Concreting industries at the end of each lesson for better understanding of some building concepts.	3.74	0.96	Agree
30	Inviting Block laying, Bricklaying and Concreting personnel from industries to deliver lessons on new innovations in building industry	3.81	0.76	Agree
31	Allowing each student to demonstrate what has been learnt after each lesson	3.90	0.72	Agree

The data presented in Table 2 revealed that nine strategies have their mean value ranging from 3.51 to 4.06. This shows that the mean value of each item was above the cut-off point 3.50, indicating that all the nine strategies can improve skills acquisition of students in Block laying, Bricklaying and Concreting in Technical Colleges in Kano State. The Tables also showed that the standard deviations (SD) of the items ranged from 0.62 to 0.97. This indicated that the respondents were

not very far from the Mean or from one another in their responses.

### Research Question 3

What are the strategies for teaching Block laying, Bricklaying and Concreting practical for Enhancing Skills Acquisition of Block laying, Bricklaying and Concreting students in Kano State?

The data for answering research question 3 were presented in Table 3

**Table 3**

**Mean Responses of the Respondents on the Strategies for Teaching Block laying, Bricklaying and Concreting Practical for Enhancing Skills Acquisition of Block laying, Bricklaying and Concreting Students in Kano State**

N =41				
S/N	Item Statements	X	S.D	Remarks
32	Allowing students to engage themselves in practicing what they learned from practical	4.06	0.86	Agree
33	Using modern hand tools for teaching during practical	4.16	0.89	Agree
34	Using well equipped and organized workshop for practical	4.09	0.87	Agree
35	Grouping students into small groups during practical for monitoring	4.22	0.58	Agree
36	Emphasis should be laid on how to use a particular tool or equipment/machine	4.00	0.89	Agree
37	Always invite building experts from building industries to give lectures to students on practical innovations	4.00	0.80	Agree
38	Always teach practical's in a well-organized and equipped workshop	3.87	0.72	Agree
39	Visit relevant building industries for practical skills acquisition (field trip)	4.09	0.83	Agree
40	Allowing students to teach themselves the acquired practical skills after the trip	3.61	0.77	Agree
41	Giving project works or model to students to constructed at the end of each lesson	4.06	0.77	Agree
42	Making it compulsory for Block laying, Bricklaying and Concreting students to have their own basic hand tools for practical	3.90	0.83	Agree
43	Allowing knowledgeable students to teach colleagues practical concepts	3.83	0.63	Agree
44	Providing practical manuals to guide students during practical	3.80	0.98	Agree
45	Allowing students to handle basic Block laying, Bricklaying and Concreting tools during practical	3.90	0.61	Agree
46	Using provided equipment/machines for teaching practical at all time	4.09	0.87	Agree
47	Providing students with simple building plans to interpret and to set them out using builder's square	3.80	0.88	Agree
48	Allocating more time for practical's than for theory	4.02	0.93	Agree
49	Assigning more marks to practical's than theory	4.03	0.94	Agree
50	Encouraging students to sketch a 2-bed room bungalow	3.93	0.89	Agree
51	Engaging students in costing a 2-bedroom bungalow	3.90	0.61	Agree

The data presented in Table 3 revealed that 20 instructional strategies have their mean value ranging from 3.61 to 4.22. This showed that the mean value of each item was above the cut-off point of 3.50, indicating that all the 20 instructional strategies can be used for teaching practical to students in Technical Colleges. The table also showed that the standard deviations (SD) of the items are within the range of 0.58 to 0.98 and are positive. This indicated that the respondents were not very far from the Mean or from one another in their responses.

#### **Conclusion**

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

Block laying, Bricklaying and Concreting at Technical College level is all about teaching skills to students for employment and wealth creation after graduation. In order for students to acquire these skills,

teachers are required to teach relevant skills to students by employing appropriate teaching and evaluation strategies. In order to prepared students adequately to perform after graduation, teachers are required to teach those saleable Block laying, Bricklaying and Concreting skills that may enhance the students' performance after graduation.

#### **Recommendations**

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

1. The skills identified in this study should be integrated into the curriculum of Block laying, Bricklaying and Concreting for training students in Technical Colleges.
2. Workshop and seminars should be organized for Block laying, Bricklaying and Concreting teachers on current technologies/issues in Block laying, Bricklaying and Concreting from time to time.

3. Teachers of Block laying, Bricklaying and Concreting should endeavor to adopt identified teaching and evaluation strategies for training their students.

### References

- Adeyemi, J. K. & Uko-Aviomoh, E. E. (2007): Effective Technology Nigeria retrieved from [www.af/a/oi/leartheor.html](http://www.af/a/oi/leartheor.html)
- Ali, A. (2006): Conducting Research in Education and the Social Sciences. Enugu: Tashiwa Netwoness Limited.
- Bakare, J. (2007). Safety Practice Skills Required by Building Construction Student of Technical colleges in Ekiti state. An unpublished PGDTE project Department of Vocational Technical Education, University of Nigeria Nsukka.
- Donli.J.G (2004),an over view of Nigeria as economic reform, central Bank of Nigeria;economics and financial review,42(4).federal government of Nigeria.(2004) national economics and development strategy(NEEDS0 Abuja national planning commission.
- Federal Government of Nigeria (2004) National policy on Education: Lagos; NERDC press
- National Board for technical education. (2005): Building Technology Curriculum. Kaduna: NBTE
- Okorie, J.U. (2000). Developing Nigeria's workforce. Calabar: Page Environ Publishers
- Olaitan,S.O.(2006).Issues in vocational technical education for self-reliance in nigeria Nsukka;NUA Publication.
- Uwaifo, V.O. (2009). *Industrializing the Nigerian Society through Creative Skill Acquisition*. Retrieved on 24/4/2009 from googlesearchwebsite
- Victor, E.O. (2006). Vocational Education: Missing link in Nigeria's Development Policy. Vocational and Technical Education Programme. *International NGO journal*, 4(4), 142-145.