

EMPLOYABILITY SKILLS GAP ANALYSIS AMONG BLOCKLAYING, BRICKLAYING AND CONCRETING GRADUATES IN NIGER STATE, NIGERIA

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Abstract: The study was designed to analyse the employability skill gap among blocklaying, bricklaying (BBC) graduates in Niger State, Nigeria. One research question and one null hypothesis guided the study. Descriptive survey research design was adopted for the study. The study was conducted in Niger State. A total of 115 respondents comprising of 33 blocklaying, bricklaying and concreting (BBC) teachers from Niger State technical colleges, 44 building technology lecturers from different Niger State institutions of learning, 20 employers of BBC graduates and 18 BBC graduates. Ninety-Two (92) items structured questionnaire developed by the researcher and validated by three experts from Industrial and Technology Education was used for data collection for the study. The data was analysed using Cronbach Alpha and it yielded reliability coefficient of 0.87. Mean and standard deviation were used to answer the research questions and two null hypotheses were tested at 0.05 level of significance using z - test. The findings revealed, among others, that BBC graduates showed skill gaps and need improvement on basic skill, communication skill, self-management, resources management and system and technology skill. Hence, it was recommended that BBC graduates should be subjected to series of retraining programme in order to fill skills gap between the graduates, employability skill studies should be inculcated into the BBC curriculum to enable them prepare adequately for work.

Keywords: Employability, Skill Gap, Technical Education, Bricklaying Bricklaying and Concreting Trade

Introduction

In Nigeria today, Technical Vocational Education and Training (TVET) is perceived as one of the solutions to high unemployment rate due to its ability to create jobs for large unemployed youth and enhancing sustainable national growth and development (Abdulrahman, 2013). This is because when individuals acquire skills or capacity, they are empowered to shape their own lives and work situation. Several institutions of learning are concerned with the production of these pools of skilled craftsmen and enhancing national technological growth and human development and among them are vocational schools and technical college. Technical college offers technical and vocational education courses. It is a vocational institution in Nigeria that prepares an individual to acquire practical skills, attitude and knowledge for effective participation in the world of work either as an employee or as self-employed (Okoro, 2006). The main objective of establishing the technical colleges is to produce lower level skilled manpower required for national economic growth and technological development (Federal Republic of Nigeria, 2014). Graduates of technical colleges are awarded the National Technical Certificate (NTC) by National Business and Technical Examination Board (NABTEB) on completing their post primary education from the technical colleges. Several trades course are offered at the technical college among them is the Blocklaying, Bricklaying and Concreting (BBC) trade. The BBC is one of the trade/course or entrepreneur courses offered in the technical college. Its curriculum is tailored towards equipping individual with skills on the application of the uses of block/bricks, building tools and concreting as applicable or use in the construction industries (Ayonmike, *et al.*, 2015). The BBC graduates are required to be able to carry out various building operations with sufficient skills and mastery. According to National Business and Technical Education Board (2006) graduate should be able to identify the basic principle of manufacture, properties and application of various types of brick/block, tools and equipment in blocklaying and bricklaying trades, mix various types of cements, aggregates and mortars, carry out simple leveling and setting out, construct simple drainage system, understand the principle of roof construction, construction of concrete ground floors and walls.

Skill according to Jamestrom (2000) is the capability of a person in carrying out a predetermined task with minimum time, energy and material resources. Osinem and Nwogi (2005) stated that skill is the ability of a person to perform a given task well as a result of training and practice. It is the capacity of accomplishing task with precision of certainty, practical knowledge in combination with ability, cleverness and expertness. In the context of this study, skill is the capability, which BBC graduate must possess to enable them work successfully either as an employee or as an employer. According to Pauline and Bremner (2018), every vocational technical education requires proper acquisition of skills and techniques by the learner in order to succeed in the world of work. Skills development is needed by all technical college graduates. However, Olubode (2013) opined that technical college's educators (teachers and instructors) encounter difficulties in preparing graduates adequately on skills for employment in a manner that meet the employers' needs. This resulted to graduates' inability to adequately prepare for employment. They do not have the requisite employability skills as sets of skills needed for their gainful employment. Knight and Mackay (2000) described employability skills as set of skills, understanding and attitudes that make graduate more likely to gain employment and be successful in their chosen occupation. According to Darce and Peter (2007) employability skill is a group of knowledge, skill, understanding and attribute that help a person to choose their occupation that makes them satisfied and successful. Employability skills are those basic skills necessary for getting, keeping and doing well in an occupation. They are transferable skills needed by an individual to make them employable. They are skills, attitude and behaviour that employer look for in their employees (Nasir *et al* 2011). Therefore, employability skills enable a person who acquired them to retain and progress on the job and secure related employment. Employability skill in TVET is becoming more and more vital so that institutions also prepare graduates for the world of work. Employers depend on educators (teachers and instructors) to provide job-ready and trainings to new graduates from institutions of learning (Olubode, 2013). In order to achieve the company's objectives, the capabilities of the employee need also to be developed. Thus, employability skills could assist employees to adjust themselves towards various changes, increases their working abilities and improving the working environment needs.

Employability skills according to the Secretary's Commission on Achieving Necessary Skill (SCANS, 2010), have been identified as seven key competencies or skills in combination with technical skills as skills for employment. This consists of basic skills, thinking skills, self-management skills, resources management skills, communication skills, inter personal skills and system and technology skills. These seven core skills or competencies are termed workplace competence skills and Foundation skills. Foundation skills are fundamental skills for participation in the workplace. They are defined as combination of basic/fundamental skills, thinking skills and self-management skills (SCANS, 2010). Basic skills are defined as the combination of: English language, literacy and numeracy. According to (Nasir *et al.*, 2011), basic skill is the skill use for creating meaning from text, expressing oneself and applying mathematics in different situations. Thinking skills are mental processes that are used to do things like solving problem, ask question, make plans or decision, evaluate ideas, treat ideas and organize information (Stella, 2003). These skills include critical thinking, problem solving and decision making skills while self- management skills refer to those characteristic that helps an employee to become more productive at work (Omisakin & Basisinwa 2011). A BBC graduate must possess these foundation skills as well as workplace competence skills which include; resources management skills, communication skill, inter personal skill and system and technology skill. Self-management skills refer to those characteristic that helps an employee to become more productive of work. They are methods, skills and strategies by which individual can effectively direct their own activities toward the achievement of objectives. Self-management includes self-discipline, perseverance, stress management, adaptability. Integrity, professionalism and work ethic (Omisakin & Basisinwa 2011). Resources management, according to Nasir *et al.*, (2011), is the process of pre-planning, scheduling and allocating resources to maximize efficiency. This includes time management, money management, material management and human management system and technology and communication skills. Hence the study is designed to determine the employability skill gap analysis among Blocklaying, Bricklaying and Concreting graduates in Niger State.

Statement of the problem

We live in a dynamic environment where things revolve around technological development and workplace needs. Hence, high level technology and better equipped workforce with advanced and more flexible employability skills are needed to meet the challenges of time. Technical colleges are solely established for the purpose of providing skills workforce or craftsmen in any trade or entrepreneur course. They give training and impart necessary skills to individuals who may want them to contribute to the national growth and development (Federal Republic of Nigeria, 2014). Unfortunately, these objectives of establishing the technical colleges over the years have not been realized. Many technical college graduates (BBC inclusive) leave the technical college without the skills, attitudes and understanding required to enter the world of work. Large numbers of technical college graduates are unemployed due to little or no skill acquired during their training period. Yasmeeen and Vasantha,(2019) lamented that large number of the unemployed youth are graduates who do not possess what is needed to keep a job even when the jobs are available. A qualitative skilled BBC graduate is an asset to the building industries and skill mismatch or gap leads to unproductive workforce. This development may be an indicator of the quality and quantity of manpower available and the main cause of unemployment among the technical college graduates. It is therefore imperative to identify the skill required, as well as the skill possessed by these BBC graduates to bridge unemployment in the society. Hence the study is to analyse the employability skill gap among BBC graduates in Niger State.

Purpose of the study

The main purpose of this study was to explore the employability skill gap among blocklaying, bricklaying (BBC) graduates in Niger State, Nigeria. Specifically it aimed to:

1. Assess the employability skills required by BBC graduates for building construction work in Niger State.

Research question

The following research questions guided the study.

1. What are the employability skills required among BBC graduates for building construction work in Niger State?

Hypothesis

H₀₁: There is no significant difference in the mean rating of the responses of BBC teachers and building technology lecturers on the employability skills required by a BBC graduates for building construction work in Niger State.

Methodology

Descriptive survey research design was adopted in carrying out the study. The study was carried out in Niger State. The targeted population for the study is made up of 115 respondents which comprises of 33 BBC teachers from all Niger State Technical Colleges, 44 Lecturers of Building Technology comprising of 15 Lecturers from Federal Polytechnics Bida, 10 Lecturers from Niger State Polytechnic Zungeru, 13 Lecturers from Federal University of Technology Minna and 6 Lecturers from Niger State College of Educations Minna, 20 Employers of BBC Graduates and 18 Graduates currently on training at Minna Innovation Institute, Minna (MIIT). The total population was used for the study. There was no sampling employed in the study because the population was manageable. A structured questionnaire was used as the instrument for data collection for the study. The questionnaire is divided into two parts; 1 and 2. Part 1: contains introduction and respondents' personal data and part 2 which was divided into two sections. Section A focuses on the employability skills required by Blocklaying, Bricklaying and Concreting (BBC) graduates in Niger State, with 92 items and Section B focuses on employability skills possessed by a BBC graduates with 92 items. All together the questionnaire contains 184 items.

The instrument was validated by three experts in the Department of Industrial and Technology Education (ITE), Federal University of Technology Minna Nigeria. In order to determine the reliability and internal consistency of the questionnaire items, a trial test was conducted in Abuja to determine the reliability coefficient of the instrument to a population of 30 respondents comprising of 10 lecturers and 15 employers in Building Construction Companies. The reliability of the questionnaire for consistency in results was measured to be 0.87 using SPSS software. The questionnaire was administered by the researchers with the help of three trained research assistants. The data collected for the study was analysed by computing the Mean and Standard Deviation of each item. While z-test was employed to test the null hypothesis at 0.05 level of significance. The mean statistics was utilized to answer research questions. Standard deviation determines the closeness or otherwise of the opinion of respondents from the mean and from one another. z-test was used to test the null hypothesis.

Results

Table 1: Mean and Standard Deviation of Respondents on the Employability Skills Required among Blocklaying, Bricklaying and Concreting Graduates for Construction Work in Niger State (N: N₁= 44; N₂=33)

S/N	Items	N	Mean	SD	Remark
Basic skills					
1.	Understand information and augmentation.	77	3.75	0.76	HR
2.	Combining verbal language and nonverbal resources to create meaning.	77	4.00	0.22	HR
3.	Ability to rephrase sentences using his own words and ask for clarification.	77	3.00	0.82	AR
4.	Read text on paper or screen.	77	3.50	0.98	HR
5.	Able to obtain details and implicit information from text.	77	3.63	0.53	HR
6.	Choose relevant writing strategies.	77	3.88	0.38	HR
7.	Explain subject related and write in different styles.	77	3.88	0.38	HR
8.	Write subject related report and document its procedures	77	3.63	1.13	HR
9.	Construct legible and clear text with correct spelling.	77	3.63	1.13	HR
10.	Analyse texts and situation and use mathematics problem solving skills in several stages.	77	3.13	0.82	AR
11.	Perform simple statistical calculations.	77	3.75	0.49	HR
12.	Choose suitable units of measurement as regard building work.	77	3.50	0.76	HR
13.	Collate or use different ways to present results from numerical processions.	77	3.80	0.42	HR
14.	Can use different means to express simple calculations.	77	3.60	0.84	HR
15.	Can decide if a result is an adequate answer to a question.	77	3.50	0.71	HR
Thinking Skills					
16.	Draw out meanings from given statements or information	77	3.70	0.95	HR
17.	Identify inconsistency or missing information	77	3.20	0.79	AR
18.	Be concern with accuracy of given statement or information	77	3.70	0.67	HR
19.	Draw conclusion from relevant or existing information	77	3.80	0.63	HR
20.	Interpret statement using logical reasoning	77	3.00	0.67	AR
21.	Use creative thinking to develop new product or idea from given or existing data	77	3.60	0.84	HR

S/N	Items	N	Mean	SD	Remark
22.	Create a visualize picture of a problem	77	3.50	0.71	HR
23.	Identify and define the problems while working on site.	77	3.20	1.32	AR
24.	Use thinking skills to generate alternatives or new action	77	3.70	0.95	HR
25.	Compare the advantages and disadvantage of alternatives	77	3.20	0.79	AR
26.	Use thinking skills to resolve difficulties in construction.	77	3.70	0.67	HR
27.	Generate new strategies to face problems on site.	77	3.80	0.63	HR
28.	Rely on reason than emotion to solve site problems.	77	3.60	0.84	HR
29.	Ask questions when in doubt	77	3.50	0.71	HR
30.	Determine the requirements or solution the problem to be solved	77	3.20	1.32	AR
31.	Have backup plan if decision goes amiss	77	3.70	0.95	HR
32.	Validate solutions against problem statement	77	3.20	0.79	AR
33.	Able to identify opportunity not obvious to others.	77	3.70	0.67	HR
Self-Management Skills					
34.	Have a personal vision and goals	77	3.60	0.84	HR
35.	Evaluate and monitor his performance	77	3.50	0.71	HR
36.	Have confidence in his ability, ideas and vision	77	3.20	1.32	AR
37.	Nurture his ideas and vision	77	3.70	0.95	HR
38.	Articulate his ideas and vision	77	3.20	0.79	AR
39.	Take responsibility	77	3.70	0.67	HR
40.	Disciplined and focus	77	3.80	0.63	HR
41.	Independence of others	77	3.70	0.95	HR
42.	Perseverance	77	3.20	0.79	AR
43.	Have good stress management	77	3.70	0.67	HR
44.	Be able to manage time effectively	77	3.80	0.63	HR
45.	Adapt to every situation	77	3.00	0.67	AR
46.	Demonstrate high level of integrity	77	3.60	0.84	HR
47.	Show good sense of humor	77	3.50	0.71	HR
48.	Control his feelings and temperament	77	3.20	1.32	AR
49.	Show enthusiasm about work	77	3.70	0.95	HR
50.	Be able to work with people	77	3.20	0.79	AR
51.	Open to new ideas and techniques	77	3.70	0.67	HR
52.	Learn in different types of situation	77	3.88	0.38	HR
53.	Demonstrate high work ethics	77	4.00	0.00	HR
Interpersonal/Teamwork Skills					
54.	Listen and communicate with group.	77	3.22	0.50	AR
55.	Accept that everyone has an input.	77	3.75	0.38	HR
56.	Set high expectation and achievement for group.	77	3.25	0.49	AR
57.	Understand that he cannot always win in the group.	77	3.75	0.76	HR
58.	Ready to take constructive criticism from group.	77	3.35	0.40	AR
59.	Remain positive and indifferent when criticized.	77	3.13	0.90	AR

S/N	Items	N	Mean	SD	Remark
60.	Recognize the hierarchy of authority in his team.	77	3.88	0.38	HR
61.	Accept contribution from team members.	77	3.64	1.30	HR
62.	Accept that others ideas may be better than his.	77	3.02	1.33	AR
63.	Always remain focus on task ahead.	77	2.25	0.38	SR
64.	Delegate wisely as group leader.	77	3.75	0.76	HR
Communication Skills					
65.	Ability to speak clearly on design proposal	77	3.13	0.90	AR
66.	Explain to others his different ideas or thoughts	77	3.88	0.38	HR
67.	Make statements that are well understood to workers.	77	2.00	0.77	SR
68.	Able to make statements that are well understood by customers.	77	3.55	1.46	HR
69.	Accept opinions from subordinates	77	3.75	0.38	HR
70.	Understand customers viewpoints	77	3.75	0.76	HR
71.	Ability to listen to customers/workers.	77	3.10	0.32	AR
72.	Be objective without evaluation	77	3.13	0.90	AR
73.	Must be able to explain to customers what the job entails	77	3.88	0.38	HR
74.	Must understand the customers need	77	2.35	1.20	SR
75.	Be able to conduct quality oral presentation	77	3.22	0.33	AR
76.	Ability to convey messages to his customers without command	77	3.13	0.90	AR
77.	Communicate orally with group of various sizes	77	3.88	0.38	HR
78.	Ability to negotiate amicably	77	3.45	0.78	AR
79.	Ability to communicate by drawing	77	3.25	0.49	AR
80.	Communicate effectively using electronic means	77	2.30	0.45	SR
81.	Must accept feedback	77	3.75	0.38	HR
82.	Ability to provide progress report of site work	77	3.75	0.76	HR
83.	Ability to Interact with client	77	3.44	1.20	AR
84.	Ability to interact with other construction professional	77	3.13	0.90	AR
System And Technology Skill					
85.	Ability to understand system.	77	3.88	0.38	HR
86.	Monitor and evaluate performance.	77	2.90	1.45	AR
87.	Improve on design system.	77	3.50	1.08	HR
88.	Able to select the right technology for a given task or work	77	3.30	0.82	AR
89.	Able to apply technology to task.	77	3.50	0.85	HR
90.	Use information technology to assist in communication and support management and planning functions.	77	3.20	1.03	AR
91.	Maintain and troubleshoot equipment.	77	3.50	1.08	HR
92.	Operate machinery and technology to assist in the completion of routine task.	77	3.60	0.84	HR
Average Mean			3.46		

Key: N = Number of respondents, SD = Standard Deviation, HR = Highly Required, AR = Averagely Required, SR = Slightly Required, NR = Not Required.

Result in Table 1 revealed that out of the 92 items raised to answer the research question, 57 skills were highly required which represents Highly Required (HR), 31 skills were Averagely Required (AR) while the remaining 4 skills were Slightly Required (SR). The average mean score showed 3.46 which falls between 2.50-3.49, this represents Averagely Required. The Standard Deviation outcomes of the items in the Table ranged from 0.62 to 1.32 which is an indication that the respondents have similar view on the employability skill required for construction work.

Table 2: Summary of z-test Analysis of the Responses of Blocklaying, Bricklaying and Concreting Teachers and Building Technology Lecturers on the Employability Skills Required by Blocklaying, Bricklaying and Concreting Graduates in Niger State

Group	N	df	Mean	SD	Z	P-value	Remark
BBC Teachers	33		45.00	20.51			
		75			-3.020	0.003	*Significant
BBC Lecturers	44		57.61	17.78			

*Significant at $p < 0.05$

Table 1 shows the comparison of z-test of the mean rating of the responses of BBC teachers and building technology lecturers on the employability skills required by Blocklaying, Bricklaying and Concreting graduates for building construction work in Niger state. The table reveals that mean of Blocklaying, Bricklaying and Concreting teachers is 45.00 and BBC Lectures 57.61 the calculated z-value ($z = -3.020$, $df = 71$, $p = 0.003$). This implies that $p < 0.05$ and the null hypothesis (H_{01}) was rejected. Hence, there was significant difference in the mean rating of the responses of Blocklaying, Bricklaying and Concreting teachers and building technology lecturers on the employability skills required by BBC graduates for building construction work in Niger state.

Findings of the study

1. Findings on the employability skills required among Blocklaying, Bricklaying and Concreting graduates for building construction work in Niger state revealed that basic skills, thinking skills, self-management skills, interpersonal/teamwork skills, communication, system and technology skills are highly required by Blocklaying, Bricklaying and Concreting graduates for building construction work.
2. Findings on the employability skills possessed among Blocklaying, Bricklaying and Concreting graduates for effective job performance in Niger state showed basic skills, thinking skills, self-management skills, interpersonal/teamwork skills, communication, system and technology skills are averagely possessed by Blocklaying, Bricklaying and Concreting graduates for building construction work.
3. Findings on employability skill gap among Blocklaying, Bricklaying and Concreting graduates in Niger state revealed that, basic skills needs improvements , thinking skills does not need improvement, self-management skills needs improvements interpersonal/ teamwork skills does not need improvement, communication skills needs improvements system and technology and system skills needs improvement by Blocklaying, Bricklaying and Concreting graduates for building construction work.
4. There was significant difference in the mean rating responses of Blocklaying, Bricklaying and Concreting teachers and building technology lecturers on the employability skills required by a Blocklaying, Bricklaying and Concreting graduates for building construction work in Niger state. The teachers have higher means than lectures.
5. There was significant difference in the mean rating of the responses of Blocklaying, Bricklaying and Concreting graduates and employers on the employability skills possessed by a Blocklaying, Bricklaying and Concreting graduates for building construction work in Niger state. BBC graduates have a higher mean rank than the Employers.

Discussion of the findings

Finding in Table 1 relating to research question one on the employability skills required among BBC graduate for building construction work revealed that graduates of BBC requires skills for drawing out meaning from given statement or information, generating alternatives or new action, resolving difficulties on construction and generating new strategies to face problem on site. This finding is in support of Olubode (2013) who reported that craftsmen required skills in order to define goals, define problem and identify alternatives and be able to validate solutions against problem statements. Thinking skills enable a BBC graduate to make alternative decision, reduce possible disagreement at work and determine the best course of action.

The finding also review that graduates of BBC require skills for good stress management, be able to manage time effectively, show good sense of humour and demonstrate high work ethic. These required skills would enable BBC graduates to manage themselves in relation to the outcomes expected of their work role. In support of this, Stella (2013) explained that individuals should be able to manage themselves in relation to the outcomes expected of their work role.

The finding also revealed that BBC graduate requires teamwork skills in accepting contribution of other, recognizing the hierarchy of authority and delegating wisely as a team leader. In support of this Lucas and Tarricone (2010) explained that team member must be flexible enough to adapt to cooperative working environments where goals are achieved through collaboration and social independence rather than individualized, competitive goals. It therefore implies that BBC graduates require skills that will enable them work together in a cooperative environment to achieve common team goals through sharing knowledge and skills.

A z-test of significance was used to test hypothesis one on the employability skill required by BBC graduates in construction work in Niger State. Table 2: the probability value of 0.003 obtained was less than the probability value of 0.5 in comparison. Therefore, the null hypothesis was rejected. Hence there is a significance difference in the mean response of BBC teachers and building technology lecturers on employability skills required for building construction work in Niger state.

Conclusion

Based on the finding of the study, it is understood that BBC graduates of technical college possess skill on the area of thinking and interpersonal skill. But, require skills and improvement in the area of basic, self-management, resources management, communication and system and technology skill. Retraining of BBC graduates, adequate exposure of BBC graduates to employability skill need as demanded by employers and industries, provision of adequate and functional ICT equipment and cordial collaboration between the technical colleges and building industries could help in bridging the employability skill gaps. When these skills are possessed by BBC graduates, it will enable them to retain and remain in employment thereby reducing the high unemployment rate witness in the country. This is because only skilled, competent and productive BBC graduates can contribute positively to the overall development of the building industries and the nation as a whole.

Recommendations

1. BBC graduates should be subjected to series of retraining programme in order to fill the skill gaps among the graduates.
2. Employability skill studies should be inculcated into the BBC curriculum to enable them prepare adequately for world of work.
3. Communication gadget and equipment such as computer, fax machine and other information communication and technology (ICT) equipment should be procured by the technical schools and students should be adequately taught on their usage before graduation.
4. Industries and employers of BBC graduates should collaborate with technical colleges with the aim of providing a clear perspective of the required employability skill needed for employment.

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