FUNDAMENTAL WORK SKILLS POSSESSED BY BLOCKLAYING AND CONCRETING TECHNICIANS FOR JOB PERFORMANCE IN BUILDING INDUSTRIES IN AKWA IBOM STATE.

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ABSTRACT

This study was carried out to identify the fundamental work skills possessed by Blocklaying and Concreting prospective graduates on Blocklaying and wall finishes; solid floor construction and floor finishes in technical colleges in Akwa Ibom State. Two research questions and two null hypotheses guided the study. The population of the study was 40 prospective graduates of Blocklaying and concreting in the three technical colleges of Akwa Ibom State randomly selected. 60 skills item questionnaire was developed and use for data collection. The data collected were analyzed using mean and standard deviation to answer the research questions and t-test at 0.05 level of significant to test the hypothesis. It was found that the prospective graduates do not possess adequate fundamental work skills on solid floor construction and floor finishes that can enhance the employment. A retraining or pre-employment training of fresh graduate of Blocklaying and concreting in such areas as solid floor construction and floor finishes should be considered to alleviate the situation. Also in the recommendation among others was the intensification of the practical working skill training in technical colleges.

Introduction

Blocklaying and concreting is offered at both intermediate and advanced levels in technical colleges. The curriculum of intermediate Blocklaying and concreting in addition to what may be termed general education subjects such as Mathematics, English language, Physics, Chemistry, Social Studies, etc has the core trade subjects to include: Introduction to Building construction, Concreting, Blocklaying, Bricklaying, Land surveying, Quality Surveying, Technical Drawing, Building Drawing and Construction Management. At the end of the programme, the students are registered to take one or all of the technical certificate examinations listed below: National Business and Technical Examination Board (NABTEB): Trade Test III/II and Federal Craft Certificate Examination.

National Business and Technical Examination Board (NABTEB) Examination and Blocklaying and concreting consists of written examinations and practical test in the above mentioned papers exception of English Language, Mathematics, Social Studies and Construction Management which are purely based on written examinations. At each level of the examination, the candidates are expected to pass in the written paper(s) as well as the practical test to earn a

certificate. They are expected to perform satisfactorily in the various practical operations that will be set for them in blocklaying and concreting.

Blocklaying and Concreting operations in the technical college curriculum involve the skills required in accomplishing given tasks in Mixing of Mortars by hand, Moulding of Blocks, Laying of Blocks, Rendering of Walls, Wall Tilling, Pointing of Walls and Laying of Curved Walls (Arches). It involves Workability Test on Concrete (Slump Test), Placing of Concrete, Application of Admixture to concrete, Compaction, Curing of Concrete and Fixing of Concrete Joint Materials (Odu, 2011).

The students will perform these operation using tools and necessary equipment while teachers or examiners access their performance based on their skills and competencies. Blocklaying and concreting operations are based on actual jobs and not on pseudo jobs. The training should be carried out to the extent that it gives the trainee a productive ability with which can be secure and hold employment and be able to profit by it. To achieve such level, proper instructional/training materials and skills must be utilized in the course of instruction. The use of training materials as Ogwa (1991) put it, involves using materials and skills that are most appropriate and commonly available in communicating more correctly and practically on the concepts of technology.

For blocklaying and concreting graduates to go into employment, they need to possess adequate fundamental work skills. Blocklaying and concreting is an integral part of vocational and technical education which leads to the acquisition of skills and techniques to enable an individual earn a living. Ezeji (1984) defined technical skills in blocklaying and concreting as the techniques needed by a person to accomplish various tasks of an operation in a building project. It should be emphasized here that while millions of people from among the educated are unemployed, millions of jobs are awaiting to be done because people with the right education and training cannot be found. The reason for this, might not be unconnected with the rapid and uncoordinated expansion of educational facilities by the various governments in Nigeria on one hand and lack of meaningful linkage between schools and industry on the other hand (Okerie, 2001).

Work and the development of advanced technology require students to have advanced knowledge on the area of work, high skills and positive attitudes. The advancement of new technology changes the way works are done and bring about a shift of workspace requirement from low skills to a well-informed high technical skills (Usoro & Anah, 2012). As ascertained by Huges, Hugu and Blatt (1996), current workplace needs students with high technical skills as well as ability to relate to others. Society needs to produce technicians needed by industries. In a complex technology driven society, as asserted by Vize (2010), it is imperative that one should have the necessary technical skills to succeed in life.

According to conference board of Canada (CBC, 2008), work skills are critical skills acquired through structural training in public or private schools through practical experience on the job in enterprises. Work skills are the most fundamental type of skills one must have to achieve in life which include organization, preparation, grooming, planning among others.

Work skills refers to a whole range of skills from the very specific technical skills required of one's profession to the subtitle, yet critical soft skills, (interpersonal and

physiological) skills needed to enter, staying in and progress in the world of work. This is what fundamental work skills is all about.

Vocational/Technical Education (VTE) according to Akpan et el (2011) has been identified as a vital form of education for the development of the nation. Apart from providing the required skills, VTE also prepares an individual for world of work.

There is increasing recognition that Technical Vocational Education and Training (TVET) skills are crucial in enhancing competitiveness and contribution to decent employment and poverty reduction. Our students needs to work or study hard to require the necessary fundamental work skills so as to gain employment or be self-reliant on graduation.

Statement of Problem

Despite the theoretical justification for the establishment of the NBTE and attempts to produce skilled craftsmen from the Technical Colleges who would be enterprising and self-reliant, it has been observed that the objectives have not been achieved (David, 2008). The graduates of Technical Colleges especially in Building trades still roam the streets. They are jobless. The effect of unemployment is obvious namely: poverty, hunger, disease, physiological torture and criminal tendencies among the youth. Indeed there are challenges for the technical students to be equipped with better education and fundamental skills in order to meet the demand to today's work place and to inspire to an improved quality of life to be self-reliant. It is on the premises of these that the study is conducted to determine the fundamental work skills possessed by technical school graduates in Blocklaying and concreting that can make them employable.

Purpose of the Study

The purpose of the study is to determine the fundamental work skills possessed by blocklaying and concreting technicians for job performance in building industries in Akwa Ibom State.

Specifically, the study seeks to:

1. Determine the fundamental work skills possessed by blocklaying and concreting technicians for job performance in building industries in blocklaying.
2. Determine the fundamental work skill possessed by blocklaying and concreting technician for job performance in building industries in wall finishes.
3. Determine the fundamental work skill possessed by blocklaying and concreting technicians for job performance in building industries in solid floor construction.
4. Determine the fundamental work skill possessed by blocklaying and concreting technicians for job performance in building industries in floor finishes.

Research Questions

The following research questions were answered by the study.

1. What fundamental work skills are possessed by blocklaying and concreting technicians for job performance in building industries in blocklaying?
2. What fundamental work skills are possessed by graduates of blocklaying and concreting in technical colleges in solid floor construction and floor finishes?

Hypotheses

1. There is no significant difference in the mean responses of the urban and the rural graduates of technical colleges in blocklaying and concreting on fundamental work skills possessed in blocklaying and wall finishes.

2. There is no significant difference between the mean responses of the urban and the rural graduates of technical colleges in blocklaying and concreting on fundamental work skills possessed in solid floor construction and floor finishes.

Significance of the Study

Blocklaying and concreting play a very important role in the technological development and economic growth and therefore requires skilled personnel who can render efficient services at all times which depends to a large extent on the fundamental skills possessed by the graduates.

The graduates of the study will lead to suggestion on a more effective training approaches in the technical colleges. This will in turn help the students to be equipped with the required skills for employment or self reliance on graduation. It will also facilitate the achievement of the objective of vocation education to the benefit of the state and Nigeria as a whole.

The implementation of the recommendations in this study will enhance skill acquisition in Blocklaying and concreting by the technical college graduates; the skilled craftsmen will render quality services and improve standard of living of the people.

Definition of the Study

The study is restricted to the assessment of the fundamental work skills possessed by the graduates of Blocklaying and concreting that can enhance employment opportunities or self reliance. In assessing this, this work skills is possessed by the graduates in Blocklaying and wall finishes; solid floor construction and floor finishes were considered.

METHODOLOGY

The Design of the Study:

The study adopted a survey design, questionnaire was used to elicit information from respondents.

Area of the Study

The area of the study was Akwa Ibom State, chosen because it was possible for the researcher to have access to institutions involved within the state for relevant information. The three Technical College randomly selected were involved in the study.

Population:

The population for the study was made up of 40 outgoing final year students of 2013/2014 session in the three technical colleges in Akwa Ibom State randomly selected (Made up of 20 students in the urban and 20 students in the rural area).

The distribution of the final year students in the three technical colleges randomly selected is as shown in table 1

1.	G.T.C Ewet, Uyo (Urban)	20
2.	G.T.C, Ikot Akata (Rural)	10
3.	U.T.C, Ikpa, Esit Eket (Rural)	10
		40

Description of the instrument for data collection

A survey instrument was developed for collecting data for this study. The instrument was structured based on the researched questions for this study. One set of questionnaire containing 2

sections, (A-B) was administered on the final year building students of the three technical college randomly selected for the study. Section A solicited information for research question one on fundamental work skills possessed by graduates of Blocklaying and concreting in Blocklaying and Wall finishes. Section B sought information for research question two on the fundamental work skills possessed by graduates of Blocklaying and concreting in solid floor construction and floor finishes. The items were grouped as indicated in each section. The items used a 4 point-likert type scale. The categories of response for section A-B were

"Highly Possessed" (H.P)-4
"Possessed" (P)-3
"Little Possessed" (LP)-2
"Not Possessed" (NP)-1

Validation of the Instrument

To establish the face validity of the instrument, the questionnaire was submitted to 3 lecturers in the department of vocational education, University of Uyo, Uyo for the purpose of obtaining their comments. The lecturers were judged knowledgeably because of their experience in research in vocational education. They were requested to assess the items and comment on their clarity and appropriateness in addressing the problem under investigation. Based on their comment modification was made of some items.

Reliability of the instrument

The reliability of the instrument was established by test retest reliability method, this procedure measured the degree of consistency overtime.

Data Collection

A total of 40 copies of the questionnaire were distributed out to the 40 final year student of 2013/2014 in Blocklaying and concreting of the three technical colleges in the state selected at random used in the study by the researcher.

Sample of the Study

The study consisted of 40 final year student of 2013/2014 session randomly selected in Blocklaying and concreting in the three technical colleges of Akwa Ibom State. A random sampling technique was used in the study. All the 40 students selected participated in the study.

Data Analyses

The data were analyzed using descriptive statistic, (means scores and standard deviation). The null hypotheses corresponding to the research questions were tested using t-test at 0.05 level of significance. If the calculated t-value is equal or greater than the table t-value, the null hypothesis was rejected, but accepted if the calculated value was less than the table t-value.

Results

Research Question 1

Fundamental work skills possessed by graduate of Blocklaying and Concreting in Technical Colleges in Blocklaying and wall finishes.

Table 2

S/N	Items	Mean Rural Graduate	SD I	Mean Urban Graduate	SD II	t-cal	Remarks
1	Set out the position of the wall on the floor using blocks, line and pins	2.50	0.80	2.55	0.80	-0.33	Possessed
2	Spread cements and mortar evenly on the floor of the marked position	2.50	0.80	2.60	0.80	-0.79	Possessed
3	Place the first course on the mortar screed as: Stretcher, half-bat, stretcher, stretcher, and stretcher.	2.55	0.60	2.55	0.60	0.16	Possessed
4	Check for alignment of the blocks with the straight edge (wooden float)	2.55	0.60	2.55	0.60	-0.40	Possessed
5	Check the first course for a horizontal level with the spirit level.	2.80	0.50	2.80	0.50	-0.38	Possessed
6	Chuck in mortar into bed joints of the first course by using the pointed end of the towel to point the mortar down and positioning the chucking board along lengths of two jointed blocks.	2.60	0.55	2.60	0.50	-.085	Possessed
7	Maintain uniform perpends	2.50	0.60	2.50	0.60	-0.75	Possessed
8	Skillfully pick mortar from the bunker	2.50	0.50	2.50	0.50	-0.60	Possessed
9	Maintain perpendicular stop ends	2.50	0.50	2.50	0.50	0.80	Possessed
10	Spread mortar screed evenly on the first course to a thickness of 13 mm	2.60	0.60	2.60	0.60	0.85	Possessed
11	Place the second course on the mortar screed as:	2.50	0.55	2.50	0.55	0.80	Possessed

	stretcher, stretcher, stretcher, stretcher and stretcher.						
12	Check for the horizontal alignment of the blocks in the second course with a straight edge	2.50	0.55	2.50	0.55	0.80	Possessed
13	Check for the vertical and horizontal levels of the first and second courses with the spirit level	2.50	0.80	2.50	0.80	0.60	Possessed
14	Lay the third course as demonstrated on the first course	2.50	0.42	2.50	0.42	0.40	Possessed
15	Lay the fourth course as demonstration in the second cost (and continue to the last course)	2.60	0.60	2.60	0.60	0.45	Possessed
endering of Walls							
16	Prepare the surface of the all by stretching and splashing water (to provide a key)	2.50	0.65	2.50	0.65	0.50	Possessed
17	Place plaster screed at convenient distances on the wall with trowel to guide for straightening the surface	2.50	0.62	2.50	0.62	0.55	Possessed
18	Level up (smoothen the surface with the wooden float to form a sandy-gritty finish	2.50	0.66	2.50	0.66	0.48	Possessed
19	Fix wooden lath or batten at the edge of the wall in order to get the thickness of the plaster	2.50	0.65	2.50	0.60	0.65	Possessed
20	Smoothen the edge of the corners of the wall with corner rubber after removing the wooden lath	1.50	0.60	1.50	0.60	-0.40	Possessed

Wall Tilling Using PVC Tiles							
21	Hack the wall with club hammer and chisel (to provide a key)	2.50	0.55	2.50	0.55	-0.65	Possessed
22	Clean and wet the hacked wall with water to receive the tiles	2.50	0.50	2.50	0.50	0.80	Possessed
23	Spread the mortar screed (or 1;2) evenly, on the surface and rule off with a straight edge to get a smooth surface	2.50	0.55	2.50	0.55	0.60	Possessed
24	Fix wooden lath about 50mm width at the corners and base of the wall to guide the fixing of the PVC tiles	2.50	0.60	2.50	0.60	-0.70	Possessed
25	Fix the tiles on the mortar screed by making a gentile tap on it with the trowel handle	1.80	0.70	1.80	0.70	0.65	Possessed
26	Test the tiles for vertical and horizontal level with spirit level and straight edge	2.50	0.50	2.50	0.50	0.55	Possessed
27	Fix the tile to get a uniform vertical and horizontal joint	2.50		2.50	0.55	0.45	Possessed
28	Cut tiles and fix at corners of the wall	2.50	0.60	2.50	0.60	0.50	Possessed
29	Rub the joints flush with a piece of cloth	1.80	0.65	1.80	0.65	0.45	Possessed
30	Clean and polish the tiles after fixing and setting	2.70	0.45	2.70	0.45	0.40	Possessed
	Grand mean and Grand Standard deviation	2.55	1.80	2.54	1.65	0.50	Possessed

Research Question 2

Fundamental work skills possessed by Graduate of Blocklaying and Concreting in Technical College in Solid Floor construction and floor finishes

S/N	Items	Mean Rural Graduate	SD I	Mean Urban Graduate	SD II	t-cal	Remarks
1	Carryout earth filling to the correct level	2.50	0.45	2.50	0.40	1.80	Not possessed
2	Lay handcore filling to the correct level	2.50	0.50	2.50	0.40	1.60	Not possessed
3	Lay over site concrete to the correct level	1.20	1.20	2.80	0.50	6.50	Not possessed
4	Lay D.P.D correctly	1.50	0.65	1.60	0.60	3.40	Not possessed
5	Lay the floor screed correctly and level off	1.80	0.45	1.90	0.50	-2.07	Not possessed
Floor Finishing							
6	Decide what type of finish is appropriate	1.50	0.70	1.60	0.65	-2.05	Not possessed
7	Organizing the materials to suit the type	1.00	0.70	1.60	0.40	2.90	Not possessed
8	If granolithic toping, ascertain whether it is monolithic method or separate	1.20	0.35	1.30	0.40	-7.53	Not possessed
9	If separate, hark the surface to provide a key, clean off the surface and saturate it with water	2.00	045	2.10	0.50	-2.09	Not possessed
10	Brush the surface with stiff slurry grout	2.10	0.60	2.20	0.50	1.24	Not possessed
11	Lay the topping to the required thickness and compact it	1.00	0.30	1.00	0.40	-2.02	Not possessed
12	Cure the topping	1.00	0.35	1.00	0.50	4.64	Not possessed
13	Can lay any floor finish like terrazzo floor finish	1.00	0.50	1.00	0.50	2.93	Not possessed
14	Can lay Concrete tiles correctly	1.80	0.40	1.80	0.40	3.27	Not possessed
15	Wood block tiles to	1.60	0.40	1.60	0.55	3.2	Not

	specification					8	possessed
16	Handle leveling, squaring and plumbing	2.00	0.40	2.00	0.70	2.91	Not possessed
17	Ensure cleanliness of area work	2.80	0.40	2.80	0.50	3.45	Not possessed
18	Handle hand mixing of concrete and mortar	2.50	0.65	2.50	0.55	4.10	Not possessed
19	Handle machine mixing of concrete and mortar	0.50	0.70	0.50	0.55	4.15	Not possessed
20	Can handle placing of concrete	1.00	0.50	1.00	0.60	3.44	Not possessed
21	Can handle curing of concrete	2.50	0.45	2.50	0.55	3.44	Not possessed
22	Can handle hand compaction well	1.60	0.50	1.60	0.60	5.12	Not possessed
23	Can handle machine compaction rising surface vibrator, pocket vibrator etc.	0.50	0.40	0.50	0.70	-2.08	Not possessed
24	Ensure correct concrete cover to reinforcement	1.50	0.45	1.50	0.50	14.31	Not possessed
25	Ability to handle material correctly on site	2.00	0.60	2.00	0.70	3.26	Not possessed
26	Maintaining good quality of work	1.50	0.80	1.50	0.75	14.32	Not possessed
27	Execute task in sequence	2.00	0.70	2.00	0.65	4.62	Not possessed
28	Ability to endure on difficulties	1.50	0.75	1.50	0.75	3.40	Not possessed
29	Select appropriate tools for a given job	2.50	0.60	2.50	0.50	2.50	Not possessed
30	Operate machine tools efficiently	0.40	0.50	0.40	0.45		Not possessed
	Grand mean and grand standard deviation	1.40	0.78	1.40	0.65	0.35	Not possessed

Hypotheses 1:
There is no significant difference in the mean responses of urban and rural graduates of technical colleges in Blocklaying and concreting on fundamental work skills possessed in Blocklaying and wall finishes.

Table 4
t-test result on fundamental work skills possessed in Blocklaying and wall finishes

Graduates	N	X	SD	DF	T	Sig. (2 tailed)	Decision
Urban	20	10.5	2.60				
				81	-3.25	0.098	Retrain H_0
Rural	20	12.6	1.82				

As shown in table 3, there is no significant difference between the urban and the rural graduates as t-ratio was -3.25 at 0.098 level of significance. This means that t-cal was not statistically significant at $p<0.05$ level because 0.098 was greater than 0.05 level. Thus the null hypothesis was retained.

Hypothesis 2:

There is no significant difference between the mean responses of the urban and the rural graduates of technical colleges in Blocklaying and concreting on fundamental work skills possessed in solid in solid floor construction and floor finishes.

Table 5
t-test results on fundamental work skills possessed by graduates on solid floor construction and floor finishes.

Graduates	N	X	SD	DF	t	Sig. (2 tailed)	Decision
Urban	20	14.40	3.80				
				81	-3.625	0.090	Retrain H_0
Rural	20	16.356	2.30				

Table 4 showed that the calculated t-ratio for fundamental work skill possessed by graduates on solid floor construction and floor finishes was -3.65 with a significant difference of 0.09. This implies that at 0.05 level of significance t-ratio is not statistically significant. Thus there was no observed significant difference in the mean responses of the urban and rural graduates.

Findings

The study has revealed the following findings:

1. Blocklaying and Concreting graduates believe that they have adequate work skills in blocklaying and wall finishes.
2. The graduates do not possess enough skills in floor construction and floor finishes.
3. There is no significant difference between the mean responses of the urban and the rural graduates on Blocklaying and wall finishes as indicated by the calculated t-value which is less than the table t-vale of 1.96 at 0.05 level of significance table 4.
4. There is no significant difference between the mean response of the urban ad the rural graduates on solid floor construction and floor finishes indicated by the calculated t-value which is less than the table t-value of 1.96 at 0.05 level of significance table 5.

Discussion of Findings

As revealed by the findings, the graduates believe that they have adequate work skills in Blocklaying and wall finishes. Furthermore, the t-test analysis on the fundamental work skill possessed by the graduates on Blocklaying and wall finishes were not significant. This implies that the urban and the rural graduates did not differ significantly in their opinion on the fundamental work skills possessed in Blocklaying and wall finishes. Their ability to possess the work skill in the area is in consonance with the opinion of (Nwaokolo, 2004) who stated that occupational skill is necessary for securing and holding employment in the recognized occupation. The result is also in consonance with the findings of Posner (2010) in a study on perfect skills accomplishes. He found that in a technology driven society, it is imperative that one has the necessary work skills to succeed in life. The researcher is of the opinion that technical teachers can do better to inculcate necessary skills in student if they use all the necessary training facilities and vary their teaching strategy in technical colleges.

The findings of this study have also revealed that Blocklaying and concreting graduates of technical colleges in AKS do not possess the desirable work skills on solid floor construction and floor finishes. Furthermore, the t-test results in respects of the hypothesis showed no significant difference in the mean responses of the urban and the rural graduates, indicating the fact that the condition is the same both in the urban and rural situation. This is in consistence with Karnnuagh in David (2008) concerning effective use of tools and equipment required in the trades so that they do not find them strange when required to work with them in industries after graduation. Also the situation is not in conformity with the view of Prosser and Quighley in David (2008) who stated that effective vocational training can only be given where the training jobs are carried on in the same way with the same operations, the same tools and machines as in the operation it self. The situation is also in consonance with Effiong in David (2008) who observed when he lamented about the plight of technical college graduates in Akwa Ibom State who could not gain employment after graduation. He went on to state that employers of labour feel reluctant to employ fresh graduates from Technical Colleges. According to Effiong, the compliant by the employers of labour is that the graduates do not perform up to expectation. It is the researcher's opinion that teachers should go extra mile and organize regular field trips for students in areas where most of the machine tools are put to effective use to intensify practical work skills training in technical colleges.

Conclusion

Blocklaying and concreting prospective graduates do not possess adequate desired work skills on solid floor construction and floor finishes. However, they posses the desired work skill on blocklaying and wall finishes. The inability of technical college training to provide building craft students with the work skill demanded by the building industry especially, on solid floor construction and floor finishes has led to the turning out of restless and disconnected generation of Blocklaying and concreting graduates. The training imparted are not competency-based. The graduates could be seen roaming the streets from one building site to another in search of employment as a result of limited knowledge and skills with inconsistency in quality of work delivered.

Recommendation

Based on the findings and the conclusions of this study, the following recommendations are made

1. There should be intensification of practical work skills training in technical colleges.
2. To help the graduates of technical colleges to be property equipped with employable practical skills, all the training facilities including machine tools should be put to effective use.
3. Technical college students should undergo industrial attachment programme every long vacation, sponsored by industrial training fund (ITF)
4. Retraining or pre-employment training of fresh graduate of blocklaying and concreting in certain areas such as, floor construction and floor finishes should be considered.

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