

Woodwork Technology Entrepreneurial Skills Possessed By Building/Woodwork Technology Education (BWTE) University Graduating Students in Enugu State

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Abstract

The study is on entrepreneurship skills in woodwork technology possessed by Building/woodwork technology Education (BWTE) graduating students of universities. The researcher looked at the implication of COVID-19 in thwarting the education program and curriculum of BWTE. Two research questions guided the study. Observational survey Research design was adopted for the study and a population and sample of 18 graduating students was used for the study. A 20-task structured observational rating scale was developed from the two research questions to rate the graduating students performance. The instrument was validated by three experts. Kendall Concordance of Coefficient (W) was used to determine the reliability score of 0.78 index value. Mean and standard deviation was used to analyze data. The results revealed that the graduating students possessed the drafting and setting-out entrepreneurial skills. There is need for entrepreneurial seminars for the graduates; this will be to enlighten them on the benefits of practicing what they studied instead of moving on to others and starting anew.

Key words: Entrepreneurial, Vocational, Education, Woodwork, Drafting, Setting-out, Skill, Corona Virus,

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I. Introduction

Transiting from school to the labour market creates problems for young school leavers in developing countries, especially in Nigeria where students are mostly prepared mainly to join government work. The ability to apply school-based knowledge, competencies, skills and attitudes to work often depends on how sufficiently trained the students are to real-life exercise while in school and Technical Vocational Education and Training students are not exempted.

Technical Vocational Education and Training (TVET) is that form of education that provides skill for specific occupation. FGN (2013) stated clearly that TVET is comprehensively referring to the educational process which involves the general education, science and technology. It also includes acquisition of practical skills, attitudes, understanding and knowledge relating to occupations in various sectors of economic and social life. This is in line with Dike (2009) who states that vocational education prepares learners for career related to specific trade, occupation or vocation. Vocational education also develops the character of youths to be self reliant after school training. Okoro (2006) perceived vocational education as that form of education whose primary purpose is to prepare persons for employment in recognized occupation or being self reliant. TVET provides the skills, knowledge and attitudes necessary for effective employment in specific occupations as well as preparing entrepreneurs. Maurice, Asu-nandl, and Ntui (2016) agreed with Okoro (2006) that vocational education is particularly relevant to the needs of Nigeria towards advancing technology, occupational mobility and improving entrepreneurial skills among its sections. One of such branches as referred to by Okoro (2006) is technology education which is part of vocational education.

TVET courses are provided in the Universities, Colleges of Education (Technical) or through co-operative programmes organized jointly by educational institutions on the one hand, and industrial, agricultural, commercial or any other undertaking related to the world of work. Sequel to the above therefore, it becomes clear that TVET is one of the key factors in promoting entrepreneurial skills (Afeti, 2010) via suitable implementation in various institutions.

TVET program in Nigeria covers the following courses of studies in the universities; Electrical/Electronic Technology Education (EETE), Automobile Technology Education (ATE), Agricultural Education, Home Economics Education (HOMECE), Office Technology Management Education (OTME), Building and Woodwork Technology Education (BWTE) and Fine and Applied Art Education (FAAE). It is the wish of the stakeholders to reduce unemployment in Nigeria thus the introduction TVET.

To further enhance the program, Students' Industrial Work Experience Scheme (SIWES) in 1973 was established by the Federal Government of Nigeria to bridge the gap between theory and practice (Ogwo, 2000, Osinem & Nwoji 2010). This introduction is to enable the students acquire entrepreneurial skills and become more technically equipped after they graduate. The role of SIWES in this regard is manifested in the context of the education policy, curriculum design and development, and BWTE students are part of the students involved in the school-industry linkage vital for labour market-driven skills development.

BWTE is a specialized education and part of Technology and Vocational Education Training programme. This is achieved through training on individual occupational skills in building and woodwork respectively. BWTE students are expected to be trained in areas concerning the two main areas (Building and Woodwork Technology Education) in their first degree. Students of BWTE are trained in vast areas of building/woodwork technology which may include but not limited to blocklaying, concreting, woodwork, plumbing and so on. In the strength of this work, entrepreneurship in woodwork technology will be treated. Areas of interest of woodwork technology education are in the following skilled areas: drafting, setting-out and formwork preparation. Other areas where BWTE students are trained in woodwork technology education cover areas like furniture making, upholstery making, and machine woodworking (Okolie, 2014).

Drafting has to do with learning technical drawing and going through training of comprehensive presentation of mechanical drawings, building plans et cetera. This is a highly developed science that has to do with the process of creating ideas of a particular object and putting down the ideas on a drawing for production and development. Brown (1990) opined that it is graphic language used by industry to communicate ideas and plans from the creative design stage through production. Maurice, Asu-nandl, and Ntui (2016) believed that drafting is an entrepreneurial skill needed to be acquired for self reliance because most people are actually earning their living through drafting after having been trained in such occupational activities. Developing entrepreneurial skills in drafting gives BWTE graduating students an edge over their counterparts in other areas when they appear for industrial interview. In drafting, building plans are prepared for effective transfer to the site known as setting out. The draft is for effective, easy and accuracy of work in the field.

Setting-out is the process of transferring the measurements on the drawing to the actual working area or stock as the case may be. The process of setting-out a project or structure is an important part of construction, as it enables the works to proceed exactly according to the prepared designs. Kennedy (2011) maintained that this is one of the main streams of the areas the students must be trained in during the training session in building/woodwork technology. Accurate setting out is a fundamental part of the construction works, and errors can be very expensive and time consuming to correct when effective entrepreneurial skills are not properly applied.

Smilor (1997) conceptualized entrepreneurial skills as the mastering of those activities, or practical knowhow that are needed to establish and successfully run a business. Maurice, Asu-nandl, and Ntui (2016) believed that the aim of the woodwork technology is to provide technical knowledge and vocational skills necessary for industrial development in order to produce skilled young men and women who will create woodwork related businesses after graduation. Entrepreneurial skill training has become needful because there is strong call for the nation to become developed through individual self reliance as the value of the citizens is not different from the nation's development (Nwabuisi, 2008).

Statement of the problem

The problems that face BWTE in the contemporary society are many and varied. The apparent lack of entrepreneurial skills in the graduates renders them ineffective in being profitably employable in recognized institutions or being self-reliant as graduates. There is therefore obvious gap between the actual skills-training these graduates received and entrepreneurial prowess they actually need to be functional and earn economic empowerment after graduation. Out of frustration, majority of these unemployed graduates join or form groups and become security threats and BWTE graduates may not be exempted.

The inability of BWTE graduates to become self reliant might be blamed on level of proficiency in skills acquired during training. Based on this premise, the researcher aims to determine the woodwork technology education entrepreneurial skills possessed by BWTE graduating students of universities in Enugu State by propounding the following research questions.

1. What are the woodwork technology drafting skills possessed by building/woodwork technology education (BWTE) university graduating students?
2. What are the woodwork technology setting skills possessed by building/woodwork technology education (BWTE) university graduating students?

II. Research methodology

An observational survey research design was adopted for the study. The population of the study is 18 BWTE graduating students of Universities in Enugu state which also served as the sample for the study. A structured observational rating scale was designed to rate the students for the study. The items were tasks developed from the two research questions. Three experts from Ebonyi State University and Enugu state College of Education (Technical) Enugu validated the tasks used as the instrument for the study. Copies of the instrument were administered on 5 BWTE graduating students of Nnamdi Azikiwe University, Awka and were rated by three different people independently. Their ratings were subjected to Kendall Coefficient of Concordance (W) to determine the agreement of the raters on the effectiveness of the graduating students on the given tasks. An index value of 0.78 was realized as the reliability score and was adjudged high enough to consider the instrument reliable for the study. Data were collected through observational method of two trained research assistant and the researcher who rated the graduating students individually while the graduating students perform the given tasks. Data were analyses using descriptive statistics of mean and standard deviation to answer the research questions. The test has 20 tasks and was given 5% for each task correctly performed to make up 100%. The mean ratings of the three raters were determined in relation to the graduating students and any of the tasks with mean rating greater than 2.50 shows that the graduating students possessed the entrepreneurial skills in that task on the other hand, any of the tasks with low mean rating shows that the graduating students do not possess the skill.

Research Question 1

What are the entrepreneurial skills possessed by Building/Woodwork Technology Education graduating students of universities in Enugu States in drafting?

Table 1: mean ratings and standard deviation of the responses on the entrepreneurial skills in drafting possessed by Building/Woodwork Technology Education Graduating Students (N-18)

S/N	Tasks on drafting skill	Mean (\bar{X})	Std	Decision
1	Select and identify adequate technical drawing instruments.	3.28	0.5066	Possessed
2	Select and identify adequate technical drawing materials.	3.12	0.5497	Possessed
3	Place the drawing sheet on the drawing board correctly.	3.19	0.5949	Possessed
4	Make border line on the drawing sheet correctly	2.91	0.5480	Possessed
5	Draw four lines measuring 2.40m in the following scales 1:25, 1:50, 1:75 and 1:100 respectively. Label them with the scales.	3.22	0.5966	Possessed
6	Select four different types of pencils among the provided from the hardest to the softest.	3.07	0.5974	Possessed
7	Draw two parallel horizontal lines and then a vertical line perpendicular to the horizontal lines.	3.14	0.5197	Possessed
8	Show by free hand sketch the symbol for 1 st and 3 rd angle projection.	3.13	0.6216	Possessed
9	Construct angles; 60 ^o , 45 ^o , and 30 ^o different points on a parallel line then bisect angle 30 ^o .	3.42	0.5495	Possessed
10	Draw the following regular polygons on the same base. A square and a pentagon.	1.35	0.4545	Not possessed
11	Make a free hand sketch of a square cube in isometric view.	2.70	0.4307	Possessed
12	Draw to full size the sketched cube measuring 40mm, dimension the drawing.	3.23	0.6531	Possessed
Grand mean		2.98	0.5518	Possessed

Data in Table 1 show a grand mean of 2.98 which fall above the criterion mean indicating that the graduating students possessed the entrepreneurial skills required. This implies that the BWTE graduating students already have acquired the entrepreneurial skills in drafting. However, item 10 indicates that the graduating students do not possess the skill of drawing different regular polygons on the same base. This is manifest in the mean rating of 1.35 which falls below the criterion mean of 2.50. Data presented in Table I above therefore revealed that all the drafting skills had their mean ratings above the criterion mean of 2.50 and above which indicate that the graduating students possessed all other skills but one skill in item 10 with mean rating of 1.35. The standard deviation ranged between 0.4307 and 0.6531 while the average standard deviation of all the items was 0.5518. This indicates that the ratings of the BWTE graduating students are closely related in the entrepreneurial skills possessed in drafting.

Research Question 2:

What are the entrepreneurial skills possessed by Building/Woodwork Technology Education graduating students of universities in Enugu States in setting-out?

Table 2: mean ratings and standard deviation of the responses on entrepreneurial skills in setting-out possessed by Building/Woodwork Technology Education Students (N-18)

S/N	Tasks	Mean (X)	Std	Decision
13	Select in order of use setting-out materials.	2.42	0.5506	Not possessed
14	Demonstrate a 3-4-5 setting out method.	2.32	0.4218	Not possessed
15	Demonstrate the setting-out using a builder's square.	2.97	0.5596	Possessed
16	Transfer the center lines of the simple drawings given to the profile board.	2.65	0.5016	Possessed
17	Indicate the foundation layout as shown on the plan.	2.91	0.4419	Possessed
18	Show the external walls on the profile board.	2.65	0.4532	Possessed
19	Show the internal walls on the profile board.	2.34	0.6213	Not Possessed
20	Determine the required measurements of the walls.	2.78	0.4128	Possessed
Grand mean		2.63	0.4953	Possessed

Data in Table 2 show that a grand mean rating of 2.63 indicating that BWTE graduating students possessed entrepreneurial skill training in setting-out. From the data in the table items 13, 14 and 19 have average mean ratings of 2.42, 2.32 and 2.34 respectively which is below the criterion mean of 2.50; this indicates that the graduating students do not possess the entrepreneurial skill on skills related to selection of setting-out materials in order of use and demonstration of 3-4-5 setting out method. Meanwhile, items 15, 16, 17, 18 to 20 have average mean ratings of 2.97, 2.65, 2.91, 2.65 and 2.78 respectively. These mean ratings are above the criterion mean of 2.50 therefore showing that the BWTE graduating students possessed the entrepreneurial skill tested in these tasks. The average standard deviation of 0.4953 in Table 1 above shows that the ratings of the BWTE graduating students in entrepreneurial skills in setting-out did not deviate significantly but are related.

III. Discussion of findings

Finding in Table 1 revealed that the graduating students in Building/Woodwork Technology Education (BWTE) possessed entrepreneurial skills in drafting. This is evidenced in the result shown on eleven out of twelve tasks showing the entrepreneurial skills in the Table. This finding agrees with Nonta (2015) who determined the extent of entrepreneurial skills acquired by electrical and electronics students on graduation for self employment in Ebonyi State tertiary institutions. The study of Nonta revealed that entrepreneurial skills acquired by electrical and electronics students are to a high extent and therefore sufficient enough to aid the students in practical application. One may wonder why the graduates are not getting involved in the world of work by using the already possessed skills in getting employed. This may be as a result of fear of failing in business and other areas of the skills. On the other hand, Inuwa (2014) disagrees with the findings and maintained that the teachers need to improve on their practical training which includes drafting skill, for proper training of graduates. Here, Inuwa is arguing that the teachers need further training to get them better oriented into the new system because of obsolete equipment as well as training they received prior to school days.

The present finding is a surprise as it contradicts the observations made within the state under review. If the result shows that students possess woodwork entrepreneurial skills in drafting, a concern is raised as to why the students do not establish business enterprises or fit into existing jobs. The faith of the programme is therefore defeated if it is not understood that the important thing in possessing entrepreneurial skill is using the possessed skills to help oneself and the society at large in increasing the economic ability. No doubt the recent pandemic will also scare majority of the graduates away, due social distancing practice within the globe.

The result of the study revealed in Table 2 through a grand mean of 2.63 that the Building/Woodwork Technology Education (BWTE) graduating students possess entrepreneurial skills in setting-out. The result of the Table indicates that in three out of the eight skills recorded for setting out, BWTE graduating students do not possess entrepreneurial skills on the tasks.

The result shows that the remaining five tasks BWTE graduating students possessed the entrepreneurial skills. This is therefore surprising because the construction industries census show that BWTE graduates are lacking within the industries. Why are the BWTE graduates not employed in building construction industries when they possessed the entrepreneurial skills to perform the woodwork jobs? The result of this Table is not in agreement with Ma'aji and Hassan (2013) who assessed the employment initiative programmes in collaboration with TVE institutions in Nigeria. The duo maintained that at the point of graduation students are not properly equipped with the necessary skills for employment, therefore the need for on the job training at the point of entry. They attributed the finding of their study to inability of the lecturers to relate the class work experience to real life situation. The result is surprising and one wonders why BWTE graduates who possesses the required entrepreneurial skills are not practicing what they have learnt from school. One other factor is that majority of those who are willing to build houses sometimes go for the quacks that seem to collect cheap fees than the graduates who are professionals and may be expensive in the eyes of the clients. Another point is the gap between class work and real life situation. If the gap between real work situation and class work is a factor, one

then may query the potency of the industrial training programmed in the institutions. There may be indication that the programme is not adequately supervised.

Implication of Covid-19

One of the cardinal goals of education is to build strong, entrepreneurial individuals and self-reliant economy through education (Federal Government of Nigeria (FGN), 2013). With this goal at heart, predictions of what the students become in the future stare on, indicating that the student may become great entrepreneurs. Nevertheless, Comfort (2012) maintained that the constant innovative changes have shown that the future is unpredictable especially as it concerns education, technology, skills and competencies. The event of the recent time has proved Comfort right as Corona Virus pandemic otherwise refer to as COVID-19 has thwarted the program of studies in the education settings. Technical and Vocational Education and training is one of such educational organs of distracted by the novel virus. From this study it was discovered that the graduating students of the universities under survey possessed some of the required skills but the COVID-19 pandemic may seem to disrupt the graduates from applying what they have learnt. This may be out of the fact that relationship today is moving from face-to-face contact to online and students were taught with face-to-face contact. To this effect majority of the graduates would have to return back for more training to get acquainted with the online contact being introduced by the novel pandemic. It also implies that any student who do not have the basic computer and internet knowledge and who does not possess the relevant gadgets for transitions must do the needful otherwise that student will be left behind.

IV. Conclusion and suggestion

Even when the results of the study revealed that the woodwork entrepreneurial skills are possessed by the graduating student, they are not efficiently and effectively enrolled in the construction industries where they are supposed to be engaged. Some factors may be responsible as shown in the discussion. The issue of COVID-19 pandemic becomes another big factor. It is clear now that majority of construction works are on the halt and this must have laid off majority of youth out of work. It will be observed that even those who were on the job will definitely loosed same and will be jobless. This is an advantage for those who understand that self-employment is the greatest asset now because when work fully resumes, construction worker will be on the increase this may be so because many would have looked for another source of income. The researcher is suggesting that entrepreneurial seminars should be organized for the graduating students. This should be done immediately after they down examination pens. The idea is to help them defeat fear and to enlighten them on the benefits of practicing what they studied instead of moving on to others and starting anew.

References

- [1]. Afeti, G. (2010). Technical and vocational education and training for industrialization. Retrieved September 26, 2017, from <http://www.arrforum.org/publication>
- [2]. Brown, W. C. (1990). *Drafting for Industry*. Atlantic: The Good Heart-Willcox Company, Inc.
- [3]. Comfort, C. (2012). Vocational technical education in Nigeria: Challenges and the way forward. *Business management dynamics*, 2(6), 1.
- [4]. Dike V. E. (2009): 'Technical and Vocational Education: Key to Nigeria's Development' <mailto:vdike@cwnet.com>
- [5]. FGN (2013). National Policy on Education 6th ed. Nigerian Educational Research and Development Council (NERDC).
- [6]. Inuwa, U. M. (2014). Skills required by woodwork technology teachers for improving practical projects in technical colleges in Kano and Jigawa states in Northwestern Nigeria. Unpublished Thesis. <http://www.unn.edu.ng>
- [7]. Kennedy, O. O. (2011). Reappraising the work skill requirements for building technology education in senior secondary school for optimum performance in Nigeria. *International Journal of Academic Research in Business and Social Sciences*, 1(3), 24.
- [8]. Ma'aji, S. A., & Hassan, A. M. (2013). Assessing the unemployment initiative programmes in collaboration with technical vocational education and training (TVET) institutions in Nigeria. *Collaboration in TVET*, 94.
- [9]. Maurice, J. E., Asu-nandi, P. B., and Ntui, E. A. (2016). Entrepreneurial Skills Development and the Building Technology Curriculum. *Niger Delta Journal of Education*. 3(1). 600-607
- [10]. Nonta, C. M. (2015). Extent of entrepreneurial skills acquired by electrical and electronic students on graduation for self-employment in Ebonyi State tertiary institutions. Unpublished Master in Education Dissertation; Nigeria: Ebonyi State University.
- [11]. Nwabuisi, E. M. (2008). Education for What?: An Inaugural Lecture of the University of Nigeria, Nsukka, Delivered on April 15, 2008. University of Nigeria, Senate Ceremonials Committee.
- [12]. Ogwo, B. A. (2000). Industry-based supervisions' training techniques in students' industrial work experience scheme (SIWES) in nine states of Nigeria. *Nigeria Vocational Association Journal (NVA)*, IX, 38-43
- [13]. Okolie U. C. (2014). Management of Woodwork Workshops in Nigerian Tertiary Institutions: An Analytical Study. *Malaysian Online Journal of Educational Management*. 2(1). Pp 20-36
- [14]. Okoro, O.M. (2006). Principles and methods in vocational and technical education. Nsukka: University Trust publishers.
- [15]. Osinem, E. C. & Nwoji U. C. (2010). Students Industrial Work Experience in Nigeria: Concepts, Principles and Practice. Enugu, Nigeria, Chaston Agency Ltd.
- [16]. Smilor, R.W. (1997) Entrepreneurship. Reflections on a Subversive Activity. *Journal of Business Venturing* 12, 341-346.