

The Place of TVET as a Tool for Manpower Development for Achieving Vision 20; 2020 in the Nigerian Construction Industry

N.A. Musa¹, J.A.B. Awolesi¹ & B.O. Okafor¹

¹ Department of Quantity Surveying, Federal Polytechnic, Ilaro, Nigeria

Correspondence: J. A. B. Awolesi, Department of Quantity Surveying, Federal Polytechnic, Ilaro, Nigeria.
E-mail: awolesiabiodun@yahoo.co.uk

Received: April 4, 2012 Accepted: May 25, 2012 Online Published: June 1, 2012

doi:10.5539/enrr.v2n2p93

URL: <http://dx.doi.org/10.5539/enrr.v2n2p93>

Abstract

In demonstration of its commitment towards achieving the Millennium Development Goals (MDGs), the Federal Government of Nigeria has set year 2020 as the target year of becoming one of the 20-leading economy globally: termed Vision 20:2020. However, Technical and Vocational Education Training (TVET) is one of the training strategies adopted for the required manpower development to drive the economy towards achieving this laudable vision. This Study therefore, examined TVET as a means of manpower development required for attaining Vision 20: 2020 in Nigeria. The major objective is to determine the effectiveness of the programme (TVET) as a verifiable tool for building the necessary manpower to drive the economy towards achieving the set vision. Towards this end, a questionnaire survey was conducted on a sample of one hundred (100) establishments that engages HND graduates in Quantity Surveying in one year youth service Scheme covering the six geo-political zones in Nigeria. The data obtained were subjected to Relative Skill Acquisition Index (R.S.A.I). The RSAI obtained was compared with the expected RSAI of 4 (Good Performance) using Chi-square (χ^2) test at 95% confidence level. SPSS 15.0 version was adopted for the analysis. The result revealed that the obtained RSAI is significantly lower than the expected ($p < 0.05$). The paper concluded that the skilled acquired by the graduates is far below the required skill that will drive the economy towards achieving the vision.

Keywords: TVET, manpower development, capacity building, quantity surveying, vision 20:2020

1. Introduction

For more than past five decades which Nigeria has attained her independent as a nation, the country has been striving to develop itself in every field of human endeavours employing every tools at its disposal. Recently, the country put in place the vision 20: 2020 as one of its strategic tool towards becoming one of the top leading 20 largest economies in the world and more importantly to consolidate its leadership position in Africa and establish itself as a force to be reckon with in the global economy and politics.

In order to achieve the set vision, the leadership of the country has been advised by the Accenture, the official Consultants on the vision to focus on the development of five key elements of economic growth and sustainable development namely (i) manpower, (ii) capital resources, (iii) technology, (iv) basic infrastructural facilities and (v) innovations (Ede, 2011). Following from above, it is realised that the built environment in any country determines the nature and pace of national development and the citizens' quality of life. Infact, in a country like Nigeria, it can be inferred that the built environment has the tendency of having major influence on the progress towards the attainment of its Millennium Development Goals (MDGs) which are aimed at reducing poverty worldwide (Ofori, 2010) as the sector contributes between 4 – 14% to the country's GDP of the country as is the case with other major developing and developed countries of the world. The sector also provides the infrastructure that supports other sectors of the economy. Strategically, the Federal government of Nigeria in realization of the significant role of construction industry in stimulating the economy and sustainable development, is investing heavily in the industry. For example, the government proposes to invest about #4.4trillion in the industry between 2011 – 2013 (Odusami & Ene, 2011). According to Odusami and Ene (2011), this will definitely boost construction activity and will constitute a major challenge for the Nigerian construction sector to provide the resources and basic infrastructure required to achieve the stated millennium goals and the vision. However, construction professionals and operatives most especially the quantity surveyors have an important role to play hence they should be highly skilled and competent. Over time, the stock of competent skilled construction workers has dwindled and the industry which is expected to be the highest employer of

labour after agriculture is populated with largely unskilled, inefficient and dissatisfied workers, who see work in the industry as a stopgap for a greener pasture. Worse still the graduates from our technical colleges and other tertiary institutions lack the skills to meet our industrial manpower requirements (Ilori, 2011). This in the opinion of Ogbimi (1999) will prevent the industry from providing the necessary goods and services to meet Nigeria infrastructural needs and solve their intractable housing problems towards achieving vision 20:2020. To address this challenge, the Federal government introduced Technical and Vocational Educational Training (TVET) into the education sector in 1992, which was not well pronounced until then when it became obvious that it could be a veritable tool for achieving the goal of vision 20: 2020 and MDGs. It is however pertinent to determine the effectiveness of TVET for the production of construction technicians that possess the required knowledge and skill to stimulate the much desired economic growth and sustainable development in Nigeria. Previous studies had identified the significant roles of TVET in manpower development and capacity building (Oduami & Ene, 2011; Ede, 2011; Olabiyi, 2005). Its effectiveness has not been empirically established, hence this study.

Construction industry has been identified as one of major sector of the economy which possess the potential to stimulating economic growth and sustain the development of any nation (Seeley, 1997; Ogunsemi, 2004). Musa (2006) however singled out the Quantity Surveyors regarding their important roles in project execution and management. This view was further reinforced by Mogbo (1998) who claimed that importance attached to the works of the Quantity Surveyors to the fact that their expertise are required for financial probity which is the hallmark of any construction project and also central to other aspects of construction operations. It is therefore required of any professional QS worthy of its onion to be competent, knowledgeable and skilful in discharging their professional and contractual obligations. It was in realization of the above stated facts that the concept of Technical and Vocational Education Training (TVET for short) was introduced in 1992 into the nation's tertiary institutions' curriculum under which technicians from such tertiary institutions that are expected to acquire both knowledge and skills required to meet the industry's manpower needs which had been lacking due to declarative method of curriculum delivery which was prevalent in the nations tertiary institutions in the past. Wikipedia (2011) described TVET as teaching procedural knowledge as against the declarative knowledge used in a usually broader scientific field that concentrate on theory and abstract conceptual knowledge - a feature of the tertiary education which Ogbimi (1999) described graduates produced under such scheme as mediocre.

Technical and Vocational Education Training (TVET) can be viewed as a comprehensive term referring to those aspects of the educational processes involving in addition to general education, the study of technologies and related sciences and acquisition of practical skills, attitudes, understanding and knowledge relating to occupation in various sectors of economic and social life (Olabiyi, 2005; Apapu & Andural, 2007; Ilori, 2011). It is a kind of education which work oriented by preparing individuals to be gainfully employed and productive at work. It is a type of training which is given in schools or classes under public supervision and control designed to prepare individuals for gainful employment either as semi-skilled, skilled workers or sub-professionals in a particular occupation. Olabiyi (2005) opined that education in general is an exercise that engages every one while vocational education prepares trainees for jobs that are based on manual or practical activities, traditionally non academic and totally related to a specific trade, occupation or vocation. It is referred to as being technical because it is developed on a particular group of techniques (Wikipedia, 2011). An individual either goes through liberal, general or vocational and technical education. The adults who are not opportune to go through formal education at youth are directly involved in knowledge acquisition through adult literacy programme and indirectly through the day to day activities (experience) and apprenticeship education. Hence, vocational technical education is being understood to be:

1. An integral part of general education.
2. A means of preparing for occupational fields and for effective participation in the world of work.
3. An aspect of lifelong learning and a preparation for responsible citizenship.
4. An instrument for promoting environmentally sound sustainable development.
5. A method of facilitating poverty alleviation

The purpose of TVET is to transmit ideas, skills and values of work in relation to the environment for production of goods and services and indigenous technological development. This involves transmission of culture related skills which is the ultimate goals of any training, since it will minimize risks of imputing sophisticated imported technical skills into the heads of people with little or no educational background without making sure that such person knows exactly what to do with such skills or has the resources, facilities or wherewithal to make use of such skills (Olabiyi, 2005). In teaching vocation technical education, the need and aspirations of individuals involved should be given priority by:

1. Permitting the harmonious development of personality and character and foster spiritual and human values, the capacity for understanding, judgment, critical thinking and self – expression.
2. Preparing the individual for lifelong learning by developing the necessary mental tools, technical and entrepreneurial skills and attitudes.
3. Developing capacities for decision- making and the qualities necessary for active and intelligent participation, teamwork and leadership at work and in the community as a whole.
4. Enabling the individuals cope with the rapid advances in information and communication technology.

Nevertheless, the Quantity Surveyor (Q.S) is equipped to be cost expert that closely watches agreed budget, provides guidance through the financial complexity of modern building construction, civil and structural engineering, mechanical and electrical engineering services, petrochemicals, mineral extraction, production engineering and environmental economics, planning and urban development, landscaping and interior design. However, expertise involves the provision of the following principal services according to Nigeria Institute of Quantity Surveyors (2003):

- 1 Preliminary cost advice.
- 2 Advising on contractual methods.
- 3 Advising on contractor selection.
- 4 Preparing tender documents.
- 5 Obtaining or negotiating tenders.
- 6 Cost planning.
- 7 Valuing construction work.
- 8 Preparing and agreeing accounts with contractors.
- 9 Preparing expenditure statements for tax and accounting.
- 10 Technical Auditing.
- 11 Assessing replacement values for insurance.
- 12 Project Cost Control.
- 13 Giving expert evidence in arbitration and disputes.
- 14 Feasibility Studies.
- 15 Investment Appraisals.
- 16 Cost control and post contract management.
- 17 Project management and co-ordination.
- 18 Value management.
- 19 Security management.
- 20 Financial Analysis.
- 21 Condition Surveys.
- 22 Expert witness Advice.
- 23 Property management.
- 24 Asset management.
- 25 Property condition Appraisals.
- 26 Facilities management

In this dispensation the technician quantity surveyors on completion of Higher National Diploma are expected to acquire both knowledge and skill to be able to assist the professional Quantity Surveyors to:

1. Measure and prepare bills of quantities and contract documents for construction works.
2. Prepare final accounts for construction projects.
3. Measure construction works.
4. Extract and compile schedule of materials required for construction.

5. Interprets contract documents of all types of construction.
6. Prepare estimates for constructional projects.
7. Undertake feasibility studies for construction projects.
8. Assist in valuing existing landed properties.
9. Give cost advice to the designer/supervisor from inception to completion.
10. Prepare budget and cash – flow for construction projects. Use computer for cost- related aspects of construction works (National Board for Technical Education, 2007).

2. Method

A questionnaire survey was conducted on a sample population of one hundred (100) Partners and Senior Quantity Surveyors found in one hundred (100) quantity surveying consulting firms that engaged the services of Higher National Diploma (HND) graduates of Quantity Surveying in one year youth service Scheme covering the six geo-political zones in Nigeria. The firms were selected through systematic random sampling techniques from 250 registered Quantity Surveying firms in the register of Nigerian Institute of Quantity Surveyors. The selected professional quantity surveyors who supervised the diplomats were asked to rate the performance of the technicians in Measurement, Cost Control, Pricing, Contract Administration and Final Accounts on the job based on five point Likert's scale. These scales are Poor (P) with rating value of 1, Fair (F) with rating value of 2, Average (A) assigned rating value of 3, Good (G) with rating value of 4, and Very Good (VG) rated 5. A total of eighty-two (82) copies of the questionnaire were retrieved representing 82% response rate. The data obtained were analysed using Relative Skill Acquisition Index (RSAI). The five –point Likert Scale was transformed to Relative Skill Acquisition Index (RSAI) for each rating. These were then ranked based on the Relative Skill Acquisition Index (RSAI). The indices were calculated using the expression:

$$\text{Relative Skill Acquisition Index (RSAI)} = \frac{5n_5 + 4n_4 + 3n_3 + 2n_2 + 1n_1}{5N} \quad (1)$$

Where n_5 is frequency of very good performance, n_4 is frequency of good performance, n_3 is frequency of average performance, n_2 is frequency of fair performance, n_1 is frequency of poor performance and N is the total frequency. The RSAI obtained was compared with the expected RSAI of 4 (Good Performance) using χ^2 test at 95% confidence level. SPSS 15.0 version was adopted for the analysis.

3. Results

3.1 Performance of the Technicians in Major Quantity Surveying Operations

The relative skill acquisition index (RSAI) of the respondents' ratings of the performance of the diplomats (Technicians) in the 5-major quantity surveying operations is presented in Table 1

Table 1. RSAI of the Ratings of the Performance of the Technicians in the Major QS Operations by the Respondents

Work Description	RSAI	Rank
Measurement	3.2	1
Pricing	3.1	2
Cost Control	2.8	3
Contract Administration	2.4	4
Final Accounts	2.3	5

Table 1 revealed that the technicians performed averagely in measurement, pricing and cost control (RSAI approx. 3) and fairly in contract administration and final accounts (RSAI approx. 2). The table further revealed that their performances in measurement ranked uppermost; followed by pricing, then cost control and contract administration respectively and final accounts formed the rear.

3.2 General Performance of the Technician

The relative skill acquisition index (RSAI) of the respondents' ratings of the general performance of the diplomats

(Technicians) is presented in Table 2

It is discernible from Table 2 that generally, the technicians performed averagely well (RSAI approx. 3)

Table 2. RSAI of the rating of the general performance of the technicians by the respondents

Technicians' Performance	RSAI
General Performance	2.9

3.3 Comparison of the Performance of the Technicians with Standard Performance

The obtained performance rating of the technicians by the respondents was compared with the expected performance of Good (RSAI 4) using Chi-square test at 95% confidence level. The result obtained is presented in Table 3

Table 3. Comparison of the observed performance with the expected

	Observed data	Expected data
Chi- Square(a,b)	61.415	46.878
Df Asymp. Sig	3.000	1.000

Table 3 revealed that the observed performance of the technicians is significantly below the expected good performance; $p < 0.05$.

4. Discussion

The obtained performances of the technicians that are better off in Measurement, pricing and cost control than in contract administration and final account is explained by the fact that they are exposed to these 3-major operations more than the later 2-major operations during their mandatory ND SIWES exercise which is an integral part of TVET. This result is in line with Omozok (2001) findings.

However, the technicians' average general performance is reflection of the inadequate acquisition of the knowledge and skill required to spur the economy towards achievement of vision 20: 2020. This is further explained statistically by Table 3.

5. Conclusions

The construction industry is a key sector in achieving the vision 20:2020. The Quantity surveying is a profession for total cost and procurement management. The Quantity surveying profession is anchored on financial probity, value for money, accountability and efficient allocation of resources, thus making the Quantity surveying an indispensable player in the value – chain matrix.

In view of this, the training of quantity surveyors is very pivotal to the achievement of vision 20: 2020. Following from the results obtained the study concluded that the National Diploma (ND) and Higher National Diploma (HND) programmes as been run in the country which provide only 4-month and 1-year respectively for the diplomats of the programmes to interact with the industry is grossly inadequate for development of required technical manpower to spur the economy towards realization of the vision (Vision 20:2020). Hence the study proffered the following recommendations:

1. That the present curriculum should be reviewed to allow more time for industrial experience. In this wise two years of the four years for the programme is being proposed.
2. National construction policy which remains largely unimplemented should be revised to meet up with the required skills needed to provide the manpower needs to achieve the vision.
3. The Government and all the stakeholders should partner to ensure implementation of the national construction policy.
4. The Government should establish the Constitution Skills Council in partnership with all the stakeholders in order to ensure provision, accreditation, regulation and funding of the training programmes to meet the construction skills to achieve the vision.

References

- Ede, A. N. (2011). Measure to reduce the high incidence of structural failures in Nigeria. *Journal of Sustainable Development in Africa*, 13(1), 153-161.
- Ilori, M. O. (2011). Innovative Technology Sector: Technical and Vocational Education (TVE) for Sustainable Development In Nigeria. Paper presented at ASUP Conference, held at Federal Polytechnic, Ilaro on The Role of TVET in achieving Nigeria Vision20: 2020 on 6th September.
- Musa, N. A. (2006). The Impact of Students Industrial Work Experience Scheme (SIWES) on Academic Performance of Students. *Journal of Management and Humanities*, 1(2), 67-71.
- Nigerian Institute of Quantity Surveyors. (2003). Who is A Quantity Surveyor: What Can He Do for You-The Client; NIQS Public Enlightenment Series No. 1
- Oduami, K. T., & Ene, G. U. (2001). Tackling the Shortage of Construction Skills in Nigeria; A Paper Presented at a 2-Day National Seminar Organized by Nigeria. Institute of Quantity Surveyors on the theme: Vision 20:2020: Strategic Industry Development Within National Development Goals in Abuja between March 22-23, 2011
- Ofori, G. (2010). Built Environment Research and the Millenium Development Goals; A Keynote Address Presented at The West Africa Built Environment Research Conference Held in Accra on July 28, 2010.
- Ogbimi, F. E. (1999). Managing Education Production Linkages: Bridging the Gap Between Theoretical Skills in Nigeria; A Paper Presented at the Jointly Organised Conference by Council of Registered Engineers of Nigeria (COREN) and Committee of Deans of Engineering and Technological Institutions (CODED) in Lagos Between July 16-19
- Ogunsemi, D. R. (2004). Meeting the Challenges of National Development: A Case Study For Review of Quantity Surveying Curriculum; A Paper Presented at the 21st Biennial Conference of NIQS; Ibadan. November 24th – 27th.
- Olabiya, O. G. (2005). Effective Teaching Method in Vocational and Technical Education Principles and Practice. Raytel Communications Ltd; Lagos
- Omozok, A. P. (2001). Status of Production Work in Out Trade Cluster of Technical Colleges in Northern Nigeria. *Journal of Engineering Technology and Industries Application*, 1(3), 187-191.
- Wikipedia. (2011). Nigeria Vision 2020 Retrieved from <http://www.en.wikipedia.org/wiki/>