Developing Country Studies
ISSN 2224-607X (Paper) ISSN 2225-0565 (Online)
Vol.4, No.4, 2014

Technical Vocational Education and Training (TVET) as Intervention Mechanism for Global Competitiveness: Perspectives from Nigeria.

K.R.E. Okoye[1] Okwelle, P. Chijioke[2]*
[1]. Department of Vocational Education, Nnamdi Azikiwe University, Awka, Nigeria
[2]. Department of Science & Technical Education, Rivers State University of Science and Technology, Port Harcourt, Nigeria
* E-mail of the corresponding Author: pc_okwelle@yahoo.com

Abstract
At national and international platforms, it has been maintained that TVET provides the needed employable skills and attitudes necessary for effective performance in the workplace. In many nations across the globe, some reform strategies to build on the inherent strength of TVET systems has been vigorously adopted, Nigeria not left behind. This paper explores the national TVET system in response to the emergent global issues on economic productivity. The following outlines provided a guide in the discourse; TVET defined, TVET reform standard and adaptability, TVET and the state of the art in Nigeria, unemployment level and the causes in Nigeria, concept transformation as mechanism for skill acquisition and why few enrolment in TVET Programs. Based on the analysis made in this paper, some recommendations were made on ways of strengthening TVET system in Nigeria for global competitiveness.
Keywords: Adaptability, Global competitiveness, TVET, Skill acquisition, Unemployment level.

1. Introduction

The population figure of Nigeria in 2012 is 168 million people and 30 million of which are students (US Embassy in Nigeria, 2012). More than one-half of this population is youths; 18 – 35 years as defined by Nigeria's National youth development policy in 2001. This age bracket comprises in greater proportion youths who are admitted into various tertiary education careers. Every year, about 150,000 students obtain their university degree and other tertiary education certificates ready for employment. In most cases these graduates believe that the only reliable employer of labour is the government. This thought was further strengthened in 2012 when the federal government improved on the welfare package of Nigerian workers. Little effort is thus put forth by graduates to venture into any self-paid engagement.

However, what appears to form a limiting factor to self-paid engagement among Nigerian graduates is the curriculum of activities of Nigeria educational system. The curriculum appears to be of liberal bias since independence. The curriculum placed emphasis on academic excellence rather than skills acquisition that would duly and truly prepare the graduates for paid or self-employment; realistically more useful and fulfilling (Awogbenle & Iwuamadi, 2010).

The projection is that if Nigerian graduates are adequately prepared through skills oriented academic system of technical vocational education and training (TVET) programs, many skills outlets would be nurtured and developed in the students for paid jobs or self-gainful engagements. This would reduce the rate of search for government paid labour. Even so, the prediction is that complexity of technology will continue to grow exponentially in response to the requirement of the labour market that is practically emphatic; those who do not possess the practical skills would be assumed incompetent and unemployable by employers of labour. As such, it is expected that graduates, should as well be equipped with integrated set of technical work skills that demand; creativity, problem-solving ability, higher thinking order skills and transferable and adaptable skills to be relevant in the labour market. The graduates equipped with these work driven skills are relatively the labour force whose professional responsibility is required to effectively perform in the dynamic and competitive world of work.

In Nigeria, most youths enrol in university and other tertiary education programs without due attention to the career prospects. On graduation, many of the graduates become unemployed because the skills acquired are dysfunctional and irrelevant to the labour demand (Okafor, 2011). At national and international platforms, it has been maintained that TVET provides the needed employable skills and attitudes necessary for effective performance in the workplace. This paper explores the national TVET system in response to the emergent global issues on economic productivity. The following outline provides a guide in the discourse;
- *TVET Defined*

- *TVET Reform Standard and Adaptability*
- *TVET and the state of the Art in Nigeria*
- *Unemployment Level and the causes in Nigeria*
- *Concept Transformation as Mechanism for Skill Acquisition*
- *Why few Enrolment in TVET Programs*

2. Technical and Vocational Education and Training (TVET) Defined

The definition of TVET is presented in two contextual frames;

i) as a corporate entity (or term), (ii) as a function

As a corporate entity or term, the component variables are examined and integrated. While technology is the scientific study and use of applied sciences; technical is the attributes of applied and industrial sciences (UNESC, 2001) and vocational refers to the preparations specifically needed for a particular job (Gale Encyclopaedia of Education, 2013).

Technical education is then a formal training that enables application of the techniques of applied sciences and mathematical principles for the services of humankind; and vocational education is the educational preparations and training provided to individuals to enable them become specifically qualified for a particular vocation.

While technical education has bias in nurturing skills and practical development of an individual, vocational education is imbued with strict adherence to guiding principles for effective professional performance in an occupational field. TVET is thus the comprehensive term referring to those aspects of the educational processes involving the study of technologies and related sciences and the acquisition of practical skills, attitudes, understanding and knowledge relating to occupations in various sectors of economic and social life (Federal Republic of Nigeria, FRN, 2004:29).

Therefore, any education program organized to orient people into skills acquisition, and as well teach them the attitude and knowledge necessary for the appropriate utilization of such skills, is referred to as technical and vocational education. It is education designated to develop specific occupational skills (Butterfield, 2000).

The primary objective of TVET programs is then to prepare students in a manner that enables them acquire the necessary skills for paid or self-employment in a specific occupation; and so has been acclaimed the best measure to provide employment to economically challenged individuals worldwide in these assertions;

> ….there was an impetus on vocational education during world war II (1939-1945) when the armed services had great need for technicians that the civilian world could not supply … upsurge on vocational training from the Servicemen's Re-adjustment Act of 1944 (the C.I. Bill of Right), which allowed world war II veterans to receive tuition and subsistence during extended vocational training (Dike 2000:133).

By implication, TVET delivery system (Audu, Karim & Balash, 2013) has the potential to train the skilled workforce that the nation needs and create employment for the youths and emerge out of poverty, underdevelopment and technical backwardness.

As a function, TVET is categorized into three socialization scopes as follows;

i) as a continuing education, (ii) as a preparation for an occupational field, (iii) as an accolade of general education.

- *as a continuing education*, it provides and facilitates seamless pathways for learners with an emphasis on articulation, accreditation and recognition of prior learning. Within this wide range of related qualities, TVET ensures a sound initial education and training aimed at learning to learn (UNESCO, 2001). It permits the updating and renewal of knowledge and practical abilities and skill in the occupational field while providing the flexibility in curriculum design that enables an individual to adapt to technological changes in his occupation, or to enter an occupation, exit or re-enter the occupation.

- *as a preparation for an occupation field*, TVET provides the foundation for productive and satisfying career. It offers a thorough and specialized preparation for paid or self-employment. TVET offers broad knowledge and generic skills applicable to a number of occupations within a given field. Someone in auto mechanic, electrical/electronics or woodwork, could with certain command of valuable skills produce building plans/drafts

and those in building/woodwork or auto mechanics could as well provide services in domestic electrical installation or electrical machines or work productively in metal work activities.

- *as an accolade of general education,* TVET renders its frame of emphasis accessible to the essential component of general education. It permits individual to understand the technological nature of modern culture and appreciate occupations requiring practical skills. TVET creates educational background necessary for democratization of entrepreneurial skills in a broader and in an organized manner for a chosen occupational field.

Going by these functional advantages, any responsible national authorities who establish policies for structural improvement of TVET programs should do so within the framework of broad policies designed to implement the principles of lifelong education through open and flexible structures for training.

3. TVET Reform Standard and Adaptability

In a national 9pm network news, March 27, 2013, the Nigeria senate president David Mark was cited to publicly inform Nigerians that the economy model in the country has failed because it is tailored towards foreign and advanced economy; and that the nation's economy should be sourced inwardly (Oji, 2013). This recommendation applauds the earlier views of UNESCO, (2001); Gale Encyclopedia of Education (2013); Oseni (2012); and Institute for Adult Learning – IAL, Singapore, (2011). The views of these reports are summarized as follows;

1. Practices and policies have to be appropriate to the prevailing conditions; and thus cannot be uncritically ported across from one system to another.
2. People should be empowered to contribute to environmental sound sustainable development through their indigenous occupations and other areas of their lives.
3. People should be made to understand the scientific and technological aspects of contemporary civilization in such a manner that they should comprehend their environment and would be capable to act upon it with conscious attention to social and environmental implications of scientific and technological change.

In 1970s, the international vocational education organizations adopted the term *career and technical education* to describe general employability and adaptability skills applicable to all occupations, as *career education* while technical/vocational education is ascribed to occupational skill training for *specific occupations* (Answers Corporation AC, 2013). Career education comprises the academic skills training in mathematics, basic sciences, language arts, and other disciplines such as social studies at secondary school level. Technical/Vocational education is associated with specific standards and broad-based transferrable skills. It implies that students enrolled in any education programs should be trained in both career and technical vocational education.

3.1 Conforming with Needed TVET Standard - International Perspective

When it became necessary that education should reflect skills training in academic and specific standards and transferable skills for adequate economic growth, in 1983 American government made annual report publication, titled; *A Nation at Risk* (AC, 2013). In response, the board in change of education worked in collaboration with association for career and technical education (ACTE) to proffer solution. Consequently, career and technical education programs were provided as a sequence of courses supplemented by work-based experiences, such as internships and apprenticeships in industries; and ACTE became the co-coordinating agency. The quality of work-force in USA thus continued to be relevant in the country's home industries and environmental changes. Technicians and craftsmen were trained in tertiary technical and vocational training institutions and mostly done by private providers.

3.1.1. United Kingdom

The British government established university for industry to focus strategically on technical vocational education training (Butterfield, 2000). National vocational qualification system was introduced from 1986, regulated by British and technology education council (BTEC).

3.1.2. Australia

Australia established Australian quality training framework (AQTF) and Australian qualifications framework (AQF) from 1995. Australian skills quality authority was also established to ensure consistency in the country's graduate quality in vocational skills. The system includes; public, technical and further education (TAFE).

3.1.3. New Zealand

National qualifications framework was introduced from 1990. Training was done in industry to up skill the workforce and respond to the changing international labour market (European Commission, 2012). New

technical and further education institute were established under the country's continuing education and training system (CET).

3.1.4. Singapore

Singapore established continuing education and training (CET) institutes referred to as workforce skills qualification (WSQ) system. There were industry-sector based competency frameworks for skills training strategy that emphasized workers' skills and industry close relationship.

Many TVET courses in the UK, Australia, and New Zealand, have currently merged their content with the workplace and/or have an electronic or online aspect (IAL, Singapore, 2011). According to this source, these arrangements were made for increased national industry and workplace productivity to support future economic development and global competitiveness.

3.2. Conforming with TVET Standard - National Perspective

The pre and post independent educational system in Nigeria was based on the British designed system of education – the 8-5-2-3 system; comprising 8 years of primary education, 5- years of post-primary education, 2 - years of higher school education and 3- years of university education. No emphasis, what so ever was placed on technical education until Ashby report of 1960. The Ashby report recommended and emphasized that Nigeria system of education should be technically oriented to produce the preciously needed technical manpower in the country.

Consequently, the common denominator of the first generation universities in Nigeria, that were established between 1960s and early 1970s was focused on applied sciences and engineering. But then, there was a kind of simple random sampling on what should form technical and vocational education curriculum contents and who should become the qualified training teacher of technology education. In response, University of Nigeria, Nsukka (UNN) started off a department of vocational teacher education (VTE) to produce Bachelor of Science graduates in industrial technical and vocational education programs. Also, some Federal Colleges of Education (Technical) were established to award Nigerian certificate in education - NCE (technical) and in other vocational fields. In addition, few conventional colleges of education and polytechnics also ran a department of technical education to produce NCE (technical) graduates too. In 1980, a seminar was held at Baguada which recommended that university of technology be established in the country. In response, some federal universities of technology were established across the country. Other state owned university of science and technology were also established.

Unfortunately, the curriculum of activities in these universities did not show much difference from the general characteristics of academic offerings in other universities in the country. Technical and vocational education program is run as a department in a general academic background in faculty of education. In the faculty of education, there has never been any priority attention to TVET programs. The workshops are dilapidated and with obsolete and non-functional machines and equipment. It was only recently, on May 7, 2013, that Oyo State government had announced its intention to open a university of Technical Education in Ibadan; the first of its kind in Nigeria; and after many decades such university was established in New York, USA.

4. TVET and the State of the Art in Nigeria

In Nigeria, there are many indicators of failure in many aspects of human endeavour especially in career and technical and vocational education and training (TVET) without adequate attention (Nguma, 2003). The socio-economic and structural imbalances in Nigeria's development are often approached in a polarized manner (Olubadewo, 2007); and Nigeria has the worst education indicators (UNESCO/Idoko, 2013).

The TVET course content in most educational institutions lack contents that would encourage adequate acquisition of relevant technical skills as well as entrepreneurial skills (Okafor, 2011). Enrolment in TVET is a continuing decline in number of students; the female enrolment figure is almost nothing (Okoye & Okwelle, 2013a; Gale Encyclopaedia of Education, 2013).

Workshops where this system of education is offered are nothing to write home about (Lilly & Efajemue, 2011). There is shortage of qualified technical instructors and lecturers (US Embassy in Nigeria, 2013). Fafuwa in Olubadewo (2007) states: "that standard of education in Nigeria is not what is at issue; what is actually falling is Nigerians' ability to meet the set standard".

The image of TVET program is very poor among people and Nigerians alike (Okoye & Okwelle, 2013b; Zain, 2008). TVET graduates are neither readily employed; they are deficient in employability skills (Audu, Kamin &

Balash, 2013), nor are they able to establish self-engaged ventures; they lack the entrepreneurial skills necessary (Audu etal, 2013).

The graduates with liberal education certificate are favoured in political appointments than their counterparts with technical and vocational skills and certificate. The first TVET graduate ever appointed Vice Chancellor was in April, 2013, 53 years Nigeria became independent. Worse still, there is no plan spear-headed to remedy the situation; knowledge system is ignored while imposing outside models on the people (Inter Parliamentary Union-IPU/Oji, April 2, 2013).

The industrial training fund (ITF) was established under Act No. 47 of 1971. Currently, ITF established skills training centres at major cities across the nation including Abuja, Federal Capital Territory. Another similar agency for vocational and technical skills training is the National Commission for mass literacy, adult, and non-formal education (NMEC), commissioned in 1990. The practices handed down in these training centres are yet dominated by foreign technology tendencies and background without reference to indigenous artifacts. Training programs thus make little of no impact on the economic independence of the people. The trainees (Nigerians) seem not to cope. The skills that should enable individuals think home to explore and exploit the immediate environment and become self-employed are lacking. Thus unemployment is still on the high percentage.

5. Unemployment Level and the Causes in Nigeria

Unemployment is a developmental index associated to any developing economy such as in Nigeria. The proportion of unemployment in a country is a reflection showing the image of the state of a nation's economy. Data from Manpower Board and Federal Bureau of Statistics (Awogbenle & Iwuamadi, 2010) show that the proportion of youth population in Nigeria is 80 million people out of 140 million Nigerians in 2006 (NPC, 2006). This figure represents 60% of the total population; and while 64 million (80%) youths are unemployed, 1.6 million of them are underemployed. This unemployment rate has been on the increase since 2008. Table 1 shows the unemployment rate in Nigeria from 2008 – 2012.

Table 1: Unemployment rate in Nigeria

Year	Unemployment Rate (%)
2008	5.8
2009	19.7
2010	21.1
2011	23.9
2012	23.9

Source: National Bureau of Statistics/World bank, 2012

The youth unemployment in Nigeria is largest among secondary school students (NBS, 2012). There are also 40% unemployment rate among urban youths aged 20 – 24 and 31% rate among those aged 15 -19 years. Two-third (2/3) of the urban unemployment ranged from 15 – 24 years old. With a population of about 168 million people in 2012 (US Embassy in Nigeria, 2012), the percentage unemployment must have increased correspondingly.

Unemployment rate in Nigeria has been blamed mainly on lack of relevant practical skills needed for paid or self-employment. The TVET prevailing curriculum of studies and infrastructures available are obsolete and archaic (Audu, Kamin & Balash, 2013; Oseni, 2012; Lilly & Efajemue, 2011; Okoye & Okwelle, 2013a); the curriculum is not practically oriented (Dike, 2009); it is rather of liberal bias. By implication, the products (graduates) will be deficient in practical and employability skills.

If youths are provided with adequate skills while in school and the aiding entrepreneurial skills, the youth unemployment would have been attended to. Just as Dike (2009) put it, skills acquisition is one of the tried-and-true ways to reduce the nation's high jobless rate and poverty.

6. Concept Transformation as Mechanism for Skills Acquisition

In technical and vocational education in particular, teachers must maintain their credibility in their own trade or profession. Maintaining credibility requires a shift from a teacher focus to learner (student) needs focus. Part of what scares enrolment in TVET programs is the inability of technology teachers to integrate theory and practice to form a unit whole (Okoye & Okwelle, 2013). According to Dike (2009) experience in the laboratory or workshop should be linked to mathematical and scientific basics and further associated to technical theory. Ideas

and mathematical expressions that are poorly linked to real life activities appear to learners as abstract, especially in Nigerian environment where mention is made of machines and equipment without seeing them.

7. Why few Enrolment in TVET Programs

The decline in TVET enrolment may be attributed to several reasons, among which are;

1) Low societal estimation of TVET. Professional practice in TVET is not seen as a substitute to gaining employment in Oil Company, banking sector, institutions' lectureship cadre, or any other quarters that are highly remunerated.
2) System of instruction does not involve in greater part, a transfer of knowledge skill to practicable skills (real life activity).
3) TVET does not provide broad-based transferrable skills that could enable utilization of traditional vocational programs for wealth generation.

8. Conclusion

From literature reviewed in this paper, Nigeria is still circumlocuting centripetally around the corridor of technology education. Policies in this regard have never been attended to with due serious responsibility. TVET programs suffer neglect and abysmal poor sponsorship in Nigeria. Data reveal that many nations have adopted the dual system, to ensure productive economy through TVET programs with every seriousness. Dual system involves technical and vocational training provided on special vocations in government approved industries and commissioned agencies.

In different countries, variety of approaches to the dual system has been adopted. Some countries stream students into the training compulsorily in school while some countries provide the training to students (graduates) after their school years; most of which have achieved relatively economic stability, productive labour force and improved gross domestic product. The promotion of TVET programs will lead to poverty eradication, disciplined society, wealth generation and reduction of unemployment rate in the country. Based on the foregoing, the authors recommend that:

1. To make TVET more viable in Nigeria, it is imperative that one or two year internship (apprenticeship) skills training scheme be introduced and made compulsory for university graduates and other tertiary education graduates. The internship should be made compulsory in selected special vocational areas. The more versatile and knowledgeable experts or adult educators who could employ a range of learning models, not just competency-based training, should be recruited as instructors in such training centres or industries selected for the purpose.

2. Nigerians should be reoriented in their social value system, especially on their erroneous impression that TVET is for the educationally poor student. In most of the countries as mentioned in the paper, the individual with technical skills and experts in special vocations are held at a very high esteem. Such individuals are treated as special people in the workplace. The experts also work in tandem with formal educations in schools and industries. The worth of every Nigerian worker should be classified according to the individual's skills and knowledge but should not be based on the score of academic degrees paraded.
3. Effort must be made by teachers of technology to link technology theory and mathematical principles to real life activity and associated to the learner's environment. In this way, learning environment will be friendlier and acquisition of skills will be more spontaneous than scientific and learning activities felt than being abstract.

References

Adebile, O.O. & Shangodoyin, D.K.. (2011), " The Need for Science and Technology Driving Forces in Sustainable Socio-Economic Development of Nigeria", *Journal of Sustainable Development* **4**(4), 152-159.

Answers Corporation (AC) (2013), "Vocational and Technical Education: Current Trends" [Online] Available: http://www.techtarget.com/cloud-service (Accessed: April 4, 2013)

Audu, R., Kamin, Y.B. & Balash, F. (2013), "Technical Vocational Education: as a Veritable Tool for Eradicating Youth Unemployment", *Journal of Humanities and social Sciences* **8**(2), 10-17.

Awogbenle, A.C. & Iwuamadi, K.C. (2010), "Youth Unemployment: Entrepreneurship Development Programme as an Intervention Mechanism", *African Journal of Business Management* **4**(6), 1-5.

Butterfield, S. (2000), "*Technical and Vocational Education through Open Learning Trends, Developments and Issues from a Local Perspective.*A Publication of Open Polytechnic, New Zealand Press. Pp. 1-6.

Dike, V.E. (2009), "Addressing Youth Unemployment and Poverty in Nigeria: A Call for Action, Not Rhetoric", *Journal of Sustainable Development in Africa* **11**(3), 129-151.

Emeh, I.E.J. (2012), "Tackling Youth Unemployment in Nigeria: The Lagos State Development and Empowerment Programmes Initiatives", Afro *Asian Journal of Social Sciences.* **3**(3&4), 1-30.

European Commission (2012), "*European Business Forum on Vocational Training"*, Conference Report of the 1st European Business Forum on Vocational Training held at Brussels, 7-8 June, 2012.

Eze, T.I. & Okoye, K.R.E. (2008), "Implementing Curriculum Innovation: Essentials for Out-Of-School Programs", *Ebonyi Technology and Vocational Education Journal* **2**(1), 122-129.

Federal Republic of Nigeria [FRN] (2004), "*National Policy on Education"*, Abuja: Federal Ministry of Education Press.

Gale Encyclopaedia of Education (2013), "*Vocational and Technical Education: Current Trends"*. [Online] Available: http://www.executivesearchdefined.com (Accessed: April 4, 2013).

Ghellab, K. (2013), "*Parliamentarians as Drives of Human Development"*, The 128th Conference Report of the Inter Parliamentary Union (IPU) held at Quito, Ecuador, March, 2013. Institute for Adult Learning (IAL), Singapore (2011), "E*merging Developments in National Vocational Education Systems: Singapore, the UK, Australia and New Zealand"*. [Online] Available http://www.ial.edu.sg (Accessed: April 25, 2013).

Lilly, G. & Efajemue, O.O. (2011), "Problems Of Vocational Teacher Education in Rivers State Of Nigeria", *Journal of Educational and Social Research* **1**(5), 45-50.

Nguma, I.A. (2003), "*Technology education and national development"*. [Online] Available: http://www.batchelor.edu.au/public/research.html (Accessed: May 13, 2013).

Oji, G. (2013: April, 2), "*Parliamentarians as Drivers of Human Development: Conference Reports*. Reports of 162 Member Nations of the Inter Parliamentary Union held at Quito, Ecuador, March, 2013.

Okafor, E.E. (2011), "Youth Unemployment and Implications for Stability of Democracy in Nigeria", *Journal of Sustainable Development in Africa* **13**(1), 358-372.

Okoye, K.R.E. & Okwelle, P.C. (2013a), "Complex Mix of Socio-political Synergy on Technical Vocational Education and Training (TVET) in Nigeria", *Kuwait Chapter of Arabian Journal of Business and Management Review*, **3**(3), 28 - 40

Okoye, K.R.E. & Okwelle, P.C. (2013b)," Technical and Vocational Education and Training (TVET) In Nigeria and Energy Development, Marketing and National Transformation", *Journal of Education and Practice* **4**(14), 143 - 138

Olubadewo, S.O. (2007), "Contemporary issue in Nigerian education. *Multidisciplinary Journal of Research Development* **8**(1), 24 – 32.

Oseni, M.I. (2012), "Training of Engineering Technicians and Craftsmen as a Vehicle of Transformation", *A Paper Presented at the 21st COREN Engineering Assembly*, 4th and 5th September, 2012, Abuja.

Trade Economics/National Bureau of Statistics (2012), " Nigeria Population", [Online] Available: http:// www.tradingeconomics.com (April 25, 2013).

UNESCO/Idoko, C. (2013: March, 14), "*Nigeria has worst global education indicators"*, Abuja: UNESCO Press.

UNESDOC (2001), "*Revised Recommendation Concerning Technical and Vocational Education"*, Paris: UNESCO Press. Pp. 1-17.

United State Embassy in Nigeria (2012), "Nigeria education fact sheet". [Online] Available: http://www.nigeria.usembassy (Accessed: April 27, 2013)

Zain, M.Z. (2008), "*TVET in Malaysia*", University Malaysia, Perlis, Press. [Online] Available: http://dspace.unimap.edu.my/dspace [Accessed: October 10, 2011)