

SUSTAINABLE STRATEGIES FOR INDUSTRY INVOLVEMENT IN REVAMPING TECHNICAL AND VOCATIONAL EDUCATION AND TRAINING (TVET) IN NIGERIA

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Abstract

Sustainable strategies for industry involvement in the development of technical and vocational education and training is aimed at examining the possible venues through which industries and other corporate bodies could contribute to the development and improvement of technical and vocational education and training in Nigeria. Technical and vocational education and training has emerged as one of the most effective human resource development strategies that Nigeria needs to embrace in order to train and modernize her technical workforce for rapid industrialization and economic transformation. The paper identified skills and knowledge as the engines of economic and industrial growth of any nation which is achieved through TVET. In order for TVET to achieve its objectives, enabling learners to acquire competency based-skills, TVET providers must ensure that their programme offerings must be pro-active to the demands of the Labour markets, be relevant to the technological work environment and contribute to poverty eradication and ensure wealth creation. Industries on the other hand should be involved in the provision of infrastructural development, equipment and Tools, and funding for the smooth actualization of sustainable living. The paper suggested that TVET and industries should collaborate in curriculum development in order to ensure that current skills required in the labour markets are emphasized and mounted by TVET institutions. Educational system (TVET) on its part needs the active support of the industry if they are to supply the industries with the required level of skills and competences. As industries undergo rapid changes, technology and automation raise the skill level of jobs. The educational system must undergo a dynamic expansion (Nwachukwu 2011). Hence the system of technical and vocational education and training must provide a continuous educational spectrum to match the continuous occupational spectrum.

Introduction

The issue of industry involvement in the development of Technical Vocational Education and Training (TVET) is not new by any means, since industries depend on the pool of skilled human resources produced by educational institutions to function. Any investment in this direction would yield the needed returns in the right proportion at the right time. Manpower development must be pursued and sustained by educational institutions particularly in Technical Vocational education and training institutions that train for skills acquisition.

Technical and vocational education and training (TVET) has emerged globally as one of the most effective human resources development strategies to train and modernize their technical workforce for rapid technological development, industrialization and economic growth (Afeti 2012). There is need to restructure the mode of training technical and vocational personnel to reflect the actual (not Pseudo) situation as in industries (Nwachukwu 2012). It is expected that the products of the programmes will eventually work in industrial establishments. It is worth of note that one of the most vital features of Technical Vocational Education and Training is its orientation towards the world of work and the emphasis of the curriculum on the acquisition of employable skills (Nwachukwu, 2012).

On this the National Policy on Education (FRN, 2014), stated that technical and vocational education is used as a comprehensive term, referring to those aspect of the 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. One of the major challenges of TVET in Nigeria is the lack of employable competencies among graduates of TVET institutions (Ayomike, Okwelle and Okeke (2014).

Despite several approaches which could have proffered solution to this problem, there seems to be no immediate solution in sight. Hence there is need for alliance between TVET and industries in the development and training of TVET students.

Our undergraduates in TVET tertiary institutions need exposure in practical skills in order to become proficient in their chosen careers or occupations for them to be useful to themselves and Nigeria society at large.

In view of the above, Oviame, (2017), defined TVET as all forms and aspects of education that are technical and vocational in nature, provided either in educational institutions or under their authority, by public authorities, the private sector or through other forms of organized education, formal or non-formal, aiming to ensure that all members of the community have access to lifelong learning for sustainable livelihood. Skills and knowledge are the engines of economic and industrial growth of any nation (Goel, 2010) in Ayomike et al (2015), and Technical Vocational education and training (TVET) holds the key to training the skilled and workforce needed for the changing technological work environment (Afeti, 2010).

Commenting on the training environment, Prosser and Quigley (2004) stated that vocational education will be efficient in proportion as the training environment in which the learner is trained must be a replica of the environment in which the individual must subsequently work.

Therefore, in Technical and Vocational education, training on the job or skills itself ensures the exact environment itself. Training in schools before going to work upon graduation can only at best imitate or approximate it. The schools should do as far as, it possible can, if it expects to establish any environment habits as preparation for advantageous entrance to secure real job. The jobs given to learners while in training should not be mere exercises, but real jobs with real tools and real machines turning out real products.

Concept of Industry Involvement in TVET Programmes

The alliance between TVET and industry is referred to as a partnership is an agreement where the parties or partners agree to cooperate to advance and enhance their mutual interests. This agreement could be between government, industries, schools, employers, professionals, employees or their representatives, the local community or organizations (Oviawe, 2017).

Industries could be owned and controlled by individuals, group of individuals or governments. In other words the private sector is the part of a country's economic system that is run by individuals and companies rather than the government while the public sector is owned and controlled by the national, state and local governments. Maigida (2014) defined public private partnership as a joint mutual agreement entered into by the government and private bodies to provide services to people based on established terms. While the Agency Francaise De Development (AFD) (2014) viewed public – private partnership as that consisting of bring together public authorities and private stakeholders to devise, finance, build, manage or preserve a project of public interest.

In view of the above, PPP is a generic term for the relationship formed between the private sector and public bodies often with the aim of introducing private sector resources or expertise in order to help provide and deliver public sector assets and services. Oviawe, (2017) was of the view that PPP in TVET refers to various agreements between the private sector partners deliver infrastructures and services that should have been provided by the public sector without compromising the profit objectives of the private partners, the primary aim of which is to provide opportunities for practical training of learners for skill development.

The concept of industry or private-private partner's involvement in the development of Technical Vocational education and training (TVET) is not new in that some developed countries of the world like the united states of America and England and many industrial concern provide schools with valuable teaching facilities like

computers, machines teaching aids, workshop equipment, Hand tools, textbooks, films for students learning and skill acquisition.

Technical and Vocational education and training must keep pace with the skill demands of the changing workplace if it is to attract students to its programmes and prepare them for meaningful and relevant employment. Industry/Business/education partnerships have played key roles in this effort by linking school to work (Brown, 2000). The prime economic consideration justifying school enterprises was the need for learners to develop the necessary competencies for self and wage employment. It therefore, becomes necessary that educational objectives guiding the school enterprises or partnership should be the development of technical, vocational, commercial and business curricula that would enhance not only the learners' capacity to create a work enterprise but also the development of general personality traits or non-cognitive dispositions and orientations through involvement in real work processes and market production (Singh, 2000).

Corporate support of TVET becomes most attractive to both partners when the goals of both industry and educational institutions are considered. In other words corporate or industry donors want their contributions reflected in a well-educated and trained pool of skilled workers upon whom they can draw to ensure business success. They want education to impart a practical skill base, adequate to meet the technological requirements of the new work force (Roy 2000). TVET must provide these skills by offering training that helps students develop industry verified competencies, as well as the non-technical transferable skills that relate to higher order thinking and high performances; examples are problem solving, teamwork, workplace adaptability – skills, required for work in the 21st century.

In Nigeria, school-industry linkage or involvement strategy dates back to the establishment of the Industrial Training Fund. The ITF was charged with the responsibility of promoting and encouraging the acquisition of skills in industry and commerce so as to produce a pool of indigenous trained personnel sufficient to meet the needs of Nigeria's growing economy (Amasa, 2015). To achieve this, the ITF initiated the supervised industrial work experience schemes (SIWES) in 1973. The aim was to provide an avenue for students in tertiary institutions to have industrial exposure in their own discipline and acquire practical skills relevant to course of study. (Nwachukwu, 2012).

In the past, there had been a few instances of school-industry corporate/partnership in Nigeria for instance; shell British Petroleum (Shell BP) had been involved in the distribution of educational materials to schools. However, such school-industry relationship had ceased to exist since the 1970s when they stopped such patronage. In those days also a few companies use to grant some children of their workforce, scholarships to attend post-primary and post-secondary courses in some institutions. In recent years, a few oil companies in Nigeria such as Chevron, Mobil,

Shell and Nigeria National Petroleum Company (NNPC) offer scholarships to undergraduate students in tertiary institutions (Nwachukwu, 2012).

Apart from these few instances of school-industry relationship, most industrial concerns in Nigeria do not seem to show sufficient interest in collaborating with schools especially technical and Vocational education institutions to produce the high skills manpower required in the workforce. There is need therefore to encourage and promote increased collaboration of industries, business enterprises and corporate organizations like banks, insurance, etc with educational institutions particularly vocational technical institutions that produce the skilled manpower needs of these organizations.

The unfortunate neglect of TVET is detrimental to national and global development. Various governments national and globally have sought to address the issue of unemployment. The number of our unemployed graduates and youths in the Labour market is sky-rocketing but more alarming and disturbing is the quality of skills possessed by these graduates, hence it, becomes highly imperative to redress the low quality and inadequate skills possessed by graduates of TVET Programmes in tertiary institutions (Oviawe, 2017). Unemployment has bedevilled the lives of people causing untold hardship suffering, dejection, frustration among others. The high rate of unemployment among youths has contributed to the high rate of poverty and social vices. Therefore, the need for industry-school (TVET) collaboration must be seen as a sine-qua-non in the areas of quality and adequate training of TVET undergraduates for skill acquisition for contemporary workplace demands.

Need for Industry Collaboration in TVET Programmes

The need for industry collaboration in TVET is justified by the fact that TVET institutions and their programmes are ineffective and of low quality in terms of learning environment, facilities and infrastructure, equipment and of low quality in terms of learning environment, facilities and infrastructure, equipment and tools, lack of instructional materials, and poor quality of teaching staff. Okeshola (2012) stated that the poor hygiene and sanitary conditions in most TVET institutions are also critical and this has been identified as a contributory factor to poor achievement and participation in TVET Programmes. As a result of the above challenges, most formal TVET institutions are currently operating in an environment that is characterized by low quality training and mismatch between training and labour market skill demand (Yusuf Soyemi, 2012), the quality of TVET facilities like workshops, books, classrooms, learning environment, machines, computer rooms, TV/Audio visual, instructors and most cases, obsolete in many tertiary institutions (Akhuemonkhan& Raimi, 2013); inadequate classroom blocks, lack of conducive staff offices, inadequate electricity supply, lack of water supply, inadequate workshop spaces, lack of consumable materials and inadequate instructional materials were identified as challenges responsible for low quality skill training given to the learners which resulted to most of them not acquiring adequate

skills required for getting and sustaining employment in the labour market or being self-employed. According to Okoye and Chijioke (2013) public-private and training has become necessary for the following reasons; the widening infrastructure gap, increased demand for TVET, inadequate government funding, inadequate facilities and falling standard of education. Therefore, corporate collaboration in TVET has become inevitable due to the growing economic and financial difficulties which have made it impossible for many governments to pay for the rather exorbitant cost of running TVET (Okoye and Chijioke 2013).

Strategic Issues for Industry Collaboration in TVET Development

Many countries like Argentina, Brazil, Chile, China, Colombia, India, Malaysia, Kenya and Egypt among others have taken active steps to forge stronger links between their academics and industrial sectors (Nwachukwu, 2012). In Brazil, this collaboration resulted in the development of an alternative fuel that replaced half the country's use of gasoline automobiles with renewable, domestic sources of energy (Davey, 2004). As another example, high rates of materials mortality in rural areas in India caused by lack of access to blood transfusions inspired the development in one medical research centre, of low-cost plastics that could resist the inherent corrosiveness of blood and be used for storing blood. The international marketing of this product has been handled in a completely commercial profitable manner, with some of the proceeds being used to subsidize local use at the product.

In like manner, industry could sponsor research and development with a view of commercializing the product of discovery for the benefit of the society at large. Through this measure, strategies for sustainable industry involvement in contributing to TVET institutions development could be elevated. Through this assistance, capacity-building could be enhanced which in turn creates labour markets for sustainable livelihood. Furthermore, it will enable men and women to effect positive changes in their lives, to become active decision-makers in their local contexts. (Seddon, 2004). Sustainable strategies for industry or business or corporate involvement or bail out in the development of Technical Vocational education and training (TVET) are measures and steps by which TVET institutions could be assisted in the identified areas of skills development in trainees, and they include:

- Workshop/Laboratory Provisions for Training
- Provision of Equipment and Tools for Training
- Infrastructural development-Classroom blocks, TV/Audio visual blocks for training, ICT blocks.
- Improved power supply through solar Energy
- Provision of conducive staff offices
- Establishment of centre for technological acquisition of skills ie centre for training the trainer and the unemployed.

- Centre for training the informal sector, centre for technical skills awareness among school pupils for the sake of improving enrolment into TVET Programmes.
- Students industrial work experience scheme (SIWES) relevant to students area of specialization
- Recruitment of qualified instructors, and Teachers.
- Institutionalizing quality Assurance and Certification in TVET Programmes
- Making TVET Curricula relevant to Labour Market demands

In view of the above measures, developing relevant skills and matching training with labour market demand for sustainable living is fundamental to effective Technical Vocational education and training. These objectives can be achieved if TVET knows the needs of industries. The skills they require as to train TVET undergraduates in such skills for workplace employment and self-reliant. TVET institutions cannot successfully achieve this role of providing high quality manpower with hybrid skills if it operates in isolation of the operating industries that operates in isolation of the operating industries that require skilled workers (Oviawe, 2017). TVET institutions must establish collaborative linkages with these industries that require their graduates. In this way such linkages on a well fashioned partnership terms will guarantee quality skill and smooth transition from school to work.

Funding is an absolutely crucial input of any educational system. It provides the essential purchasing power with which education acquires its human and material resources. It is difficult and embarrassing to talk of the relevance and quality of TVET without considering the issue of funding and indeed, the funding process (Oviawe, 2017). TVET has suffered in the hands of general education administrators who in many countries have control over funds especially when such funds are centrally controlled, and where TVET is jointly managed with general education. In such situation, the likely personnel in control for obvious reasons may be the general educator who hardly understands that TVET is much more capital intensive and more financially demanding than general education. The best way out is to separate the management of TVET from that of general education. In Nigeria, the establishment of the National Board for Technical Education (NBTE) and TVET boards at the state level has to an extent addressed the management issues. However, a lot still needs to be done by ensuring that only professional TVET managers and policy makers with adequate expertise and insight be placed in control of TVET Programmes (Oviawe, 2017). In addressing the skill needs of the teeming youths and ever-increasing unemployment and underemployment government globally have to strengthen the link between educational institutions and work place.

This will no doubt take the form of closely involving the industry, and developing occupational standards and competency-based verification and continuous assessment of trainees through process and product evaluation template.

Benefits of TVET- Industry Cooperation/Collaboration

Developing relevant and occupational specific skills and matching training with workplace skills for sustainable development is fundamental to effective TVET delivery. Oviawe (2017) stated that if the objective of TVET should be achieved, TVET should know the needs of these industries in terms of skills required from the products or graduates of TVET institutions. These needs the author highlighted include practical capacity ie capacity for skill acquisitions; theoretical and technical knowledge, creativity and entrepreneurship, social capacity, and information and communication technology (ICT) skills (Madungwa, 2012). Other skills needed by the workplace include communicative skills, critical thinking and problem solving skills, team work. Long learning and information management skills; entrepreneurship skills, possessing analytical and planning skills, working well in dynamic and rapidly changing environment, and so on (Obi and Nwachukwu 2018).

TVET institutions cannot successfully achieve this role of providing high quality manpower training for skills acquisition in isolation of the operating industries that require skilled work force (Oviawe 2017).

The prime economic consideration justifying TVET – industry collaboration was the need for learners to develop the necessary competencies for self- and wage employment. Therefore, corporate support or collaboration becomes most attractive when both partners see their contributions reflected in a well educated, and trained pool of workers upon whom they can draw to ensure business success.

There is the need to encourage and involve non-governmental organizations or private organizations to participate in the provision of Technical Vocational education and training (TVET) as government alone cannot do it.

On the reasons why government adopts public-private partnership model Ndagi (2010), highlighted the following:

- PPP enhances governments' capacity to develop integrated solutions to infrastructure provisions, decline decay.
- It facilitates creative, innovative, cost reducing and foster approaches to project implementation.
- It enhances public management, improved quality services and generation of additional revenues.
- It facilitates access to skills, experience and technology while enhancing transfer and acquisition of technical knowledge know-how.
- It allows for transfer of risks which are inherent to project partners on agreed sharing formula.

While Maigida (2014) advanced the following as reasons for the need for corporate/PPP in TVET:

- High cost of providing infrastructure for effective TVET Programme.

- Most countries of the world have not realized that the state alone cannot provide the needed access to high quality infrastructure and skill training.
- Private sector involvement whether at provision of infrastructure or at the level of training delivery can greatly enhance what the state affords.

Therefore, in order to sustain economic, industrial and technological development of any nation, great emphasis should be placed in linking TVET Programmes to the rapidly changing demands of the Labour Markets.

In this way TVET Programmes will be responsive and proactive to the various skill demands of the industries. To boost technological and economic and industrial development, there is urgent need to foster industry/ PPP collaboration in the development of Technical Vocational education and training in Nigeria. This would in turn help to raise the falling standards of our educational systems.

The areas of industry-TVET institutions co-operation could be viewed as inexhaustible. The Nigeria government is interested in sharing the cost of training Technical Vocational education and training, this was demonstrated by the recent training of youths displaced by insurgence in the North east of the country as well as those from the Niger Delta for the acquisition of vocational skills in overseas and within the country.

According to African Development Fund the benefits of PPP in TVET are among others:

- Speedy, efficient cost effective delivery of training programmes.
- Poverty and unemployment eradication through human resources development.
- Improved access to quality TVET in formal and non-formal training institutions.
- Facilitate effective acquisition of practical skills as the industries will provide adequate facilities and competent instructors for the training and enhance employment-oriented skills for youths and adults alike.

It is believed that industry /PPP involvement in improving TVET would in no small measure improve curriculum planning and implementation in TVET Programmes.

Conclusion

Sustainable strategies for industry involvement /PPP in the development of Technical Vocational educational and training aims at examining the ways by which co-operate efforts could be fostered between private/public sector and technical vocational education and training institutions or providers in the provision of infrastructure, equipment and Tools, participate in funding; capacity building for skills acquisition, provision of instructional materials or resources like textbooks, computers, power-points, Audio visual/TV rooms and most importantly planning and re-orientation of the curricula in TVET to reflect the needs of the present work force in industries other organizations (Nwachukwu, 2012).

In view of the huge demands globally due to the high level of unemployment and poverty and the quest for technological development, industrialization and economic growth, TVET is challenged strategically in the areas of infrastructure, instructors, poor attitude towards implementing TVET policies, training facilities, quality assurance and certification in TVET Programmes.

Recommendation

Based on the above issues raised in this paper, the following recommendations are suggested:

- 1 The writers are of the view that private sector/industry partnership should be encouraged so as to ensure effective development training programmes necessary for acquisition of industry verified competencies by TVET graduates.
- 2 The donation of equipment and tools by industries, corporate organizations like, Mobil, Chevron oil, Shell petroleum and Nigeria national Petroleum Company should be sustained as this would help students keep abreast with the changes taking place in the world of work.
- 3 Government should liaise with TVET institution to establish centre for technological acquisition of skills and centre for technical and vocational skills awareness among school pupils, students and unskilled adults, this will help to improve enrolment into TVET programmed.
- 4 Collaboration between TVET institutions, industries curriculum development to address the skill requirements of these enterprises should be encouraged and sustained. The need for recurrent skills and the changing Labour Market conditions call this should be sustained through mutual understanding and agreement among the PPP providers.

References

- Afeti, G., (2012). Technical and Vocation education and training for industrialization. Retrieved on 20/6/ 019, from www.arrfrom.Org/index.php.
- Agency Francaise De Development (2014). Public-private partnership in vocational training: Taking stock of AFS'S experience and strategic recommendations. Retrieved on 20/6/019 from www.afd.org.
- Akhuemonkhan, I. A. & Raimi, L. (2013) Impact of quality assurance on technical vocational education and training (TVET) in Nigeria. Retrieved on 20/6/019 from.pptx.
- Amasa, G.D. (2015). School-Industry partnership: A vehicle for socio-economic development in Nigeria; in Koduba, T. F. Asomonu, N.P.M. (eds); Social and economic implications of vocational and technical education for

- technology development in Nigeria. *Umunze Research and Publication Unit*.
- Ayomike, C.S, Okwelle, P.C. & Okeke, B.C. (2015). Towards quality technical vocational education and training (TVET) Programmes in Nigeria: Challenges and improvement strategies. *Journal of education and learning*, 4(1) 25-34.
- Ayomike, C.S, & Okeke, B.C. (2014) Competency based education and training in Technical Vocational education: Implication for sustainable national security and development. *Journal of Educational Policy and entrepreneurial research (JEPER)*,1(2),290-30.
Retrieved on 24/6/019 From www.iiste.org/journals/index.php.
- Brown, B.L. (2000). Myths and Realities: corporate/school partnerships: learner-centred or business-centred. (5) *centre on education and training for employment. The Ohio State University USA*.
- Davey, K. (2004). The role of vocational educational and training in engaging communities. Career link, 4-Sacred Heart College, Sorrento, Western Australia, Australia. Retrieved on 16/6/019 from [www.http://www.worldbank.org](http://www.worldbank.org).
- Federal Republic of Nigeria (2014). *National Policy on Education. Revised edition (7th Edition) Government Press, Abuja*.
- Goel, V.P. (2010) IN Ayomike (2015). Technical and Vocational education and training (TVET) system in India for sustainable development. Retrieved on 25/6/019 from [http://www.unevoc.unesco.org/up/India country paer.pdf](http://www.unevoc.unesco.org/up/India_country_paer.pdf)
- Madungwa, A (2012). Achieving better teaching and learning In TVET. Paris: UNESCO. Retrived on 20/6/019 from <http://ajol.info/majohe>.
- Maigida, J.F. (2014). Building and sustaining partnership through public. Private partnership for effective technical vocational education and training programme in Nigeria. A paper presented at the 2014 annual international conference of International Vocational Education Association (IVETA) at Tennes, USA. November 18-19. Retrieved on 24/6/019 from [www.iveta.org/...](http://www.iveta.org/)
- Ndagi, A (2010). Understanding public–private partnership in TVET development for technology and science innovation. A paper presented at the National workshop of National Centre for technology Management in Minna, 16th – 18th June.
- Nwachukwu, A. O. (2012). Sustainable strategies for industry involvement in the development of vocational education and training: Implication for skills acquisition. A seminar Paper presented to school of Postgraduate studies UNIZIK

- Obi, W.J.D. & Nwachukwu, A.O. (2017) Entrepreneurs Skills Needed by the Electrical/Electrics Technology Education Students to be Self-Reliant After Graduation. A paper Presented at the 30th Annual National Conference of Nigerian Association of Teachers of Technology held at ATBU, Bauchi from 23rd to 26th October 2017.
- Okeshola, F. B. (2012). Challenges facing realization of millennium development goals (MDGs) in educational reform in Nigeria. *European scientific journal* 8 (2), 201-205. Retrieved on 20/6/019 on [www.http://ajol.info/majohe](http://ajol.info/majohe)
- Okoye, K.R.E & Chijioke, O.P. (2013). Private-public partnership and technical vocational education (TVET) in a developing economy. *Arabian Journal of Business and Management Review* 2(10), 51-61.
- Prosser & Quigley (2004). Vocational Education in a Democracy. *American Technical Association Journal* (8), 9.
- Roy, D. A. (2000). New partnering for higher education and the corporate sector. AGB Occasional paper No. 18 Washington D. C. Association of Governing Boards of Universities and Colleges.
- Seddon, T. & Billets (2004). Social Partnership in vocational education, building community capacity, Australian National Training Authority.
- Singh, M. (2000). School Enterprises: Combining vocational learning with production. *International project on Technical and Vocational Education (UNEVOC)*. Berlin, Germany: United Nations Educational, scientific and Cultural organizations.
- Yusuf, M.A.F & Soyemi, J. (2012) Achieving sustainable economic development in Nigeria through technical and vocational education and training: The missing link. *International journal of Academic Research in Business and Social Sciences* 2 (2), 71-77.