

Transformation of Technical and Vocational Education and Training (TVET): A Strategy for Achieving Sustainable Development in Nigeria.

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Abstract.

Education and Training plays a vital role in transforming people towards sustainable development. Sustainable development is a development that meets the needs and aspirations of the present generation without depriving the future generation the resources to satisfy their own needs. Technical and vocational education and training is that aspect of education and training that will cater for the present and future needs of all learners regardless of class, ethnicity, location, age and other socially ascribed traits. Unfortunately, TVET programmes in Nigeria has been faced with so many challenges that prevents the recipients from acquiring the skills that will lead the country towards achieving sustainable development. Without tackling these challenges, achieving sustainable development in Nigeria will be a mere dream. The paper therefore focused on transformation of technical and vocational education and training for sustainable development by discussing the following issues; TVET, sustainable development, need for transforming TVET for sustainable development and strategies for transforming TVET for sustainable Development. Based on these, the paper recommended among others that employers should re-orient existing employees by acquainting them with new concepts and practices to improve their work processes, teachers must keep abreast of rapid development in their field of expertise and must be able to integrate new technologies into their teaching and as well government should ensure that TVET institutions have adequate and conducive learning environment.

Keywords: *Sustainability, technical and vocational education and training, transformation.*

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I. Introduction

Achieving sustainable development in developing countries has been as uphill task. This is because developing countries especially Nigeria seems not to have given much recognition to human development as a major determinant for sustainable development. Human development is all about creating an environment in which people can develop their full potentials in accordance with their needs. Education and training has been considered a critical linchpin to improving people with the knowledge and skills needed to be able to adapt to the changes that occur around them. Technical and Vocational Education and training is the master key that can provide the environment that will improve the quality of life for all and help achieve sustainable development. George, Iddeme and Stella in Muhammed, Yusri and Abdullahi (2019) stated that TVET holds the key towards achieving sustainable development through equipping individuals with the necessary skills, abilities, competencies to succeed in employment and to contribute to the sustainable development of a nation. Corroborating with this view Federal Republic of Nigeria (FRN), (2014) stated that TVET aims to prepare the trainees for occupation or fields effective for participation in the world of work and promotion of environmentally sound sustainable development. However, TVET in Nigeria are faced with enormous challenges and issues such as mismatches between graduate skills and job requirements or market demands, outdated curriculum, weak policy making, impact of economic, social and political factors among others which are militating against TVET as a means of achieving sustainable development. These issue and challenges are mainly as a result of globalization, changes in technology, lack of security, political instability, poor economic policies, climate change etc. With these challenges unattended, it will not be easy for Nigeria to achieve sustainable development as these challenges have amounted to massive youth unemployment in the country. The increasing rate of unemployment is a mere indicator to the fact that most Nigerian youths may not have the skill to start and operate a business and become self-reliant. No nation can achieve sustainable development without a skilled, productive labour force that can meet the changing requirements of its environment. For TVET to be able to respond to the multiple demands placed on it as a result of constant and rapid economic, social, geo-

political and technological change, there is need to transform TVET as the best means to meet the needs of the teeming youths of Nigeria for sustainable development.

Technical and Vocational Education and Training (TVET) System in Nigeria.

Technical and Vocational Education and Training in Nigeria is a major producer of technicians, technologist and engineers that are absorbed in the industries and the informed sector of employment. It comprises of the formal, informal and non-formal system. The formal system is obtainable in the universities, polytechnics, monotechnics, colleges of education (technical), technical colleges and other specialized institutions like vocational enterprise institutions etc. While the non-formal TVET are those programmes designed, run and managed by private and public organizations for the purpose of addressing specific needs example, Nigeria Breweries training schools, Team Fadama training Center etc. The informal system works mainly through apprenticeship programmes run by roadsides mechanics, blacksmithing, carpenter, painter, electrical/electronics technicians etc. TVET programmes at all these levels aims to provide adequate and appropriate skilled workforce through practical training and work experience so that they can respond and adapt to changes occurring in their communities as well as become catalyst for community change. This means that TVET institutions can respond to the different training needs of learners from different socio-economic and academic backgrounds and prepare them for gainful employment and sustainable livelihood. Nevertheless, TVET system has not been given its rightful place in Nigeria. UNESCO (2017) confirmed this in a statement that in spite of the contribution that TVET can make in developing the formal and informal sector of the economy not much has been done to address the challenges the programme faces in order for it to be more beneficial to the formal and informal sector. The demand for skilled graduates in the labour market is not always matched with the acquired skills. World Bank Report (2015) stated that TVET curriculum is rooted in a rigid supply-driven system with little or no linkage or relevance to the labour market needs hence graduates lack skills, knowledge and competence for attaining Vision 2030. A high percentage of workshops operates on obsolete tools and equipment, inadequate trained technical instructors, inadequate fund for consumables and workshop facilities. This could attest the reason why the youth are not benefiting from TVET for gainful employment and better livelihood. Experience from TVET programme in different countries such as Brazil, Japan and Germany e.t.c shows that most successful TVET programmes are those that are designed based on market demands. Emeh in Okoye and Okwelle (2013) stated that youth population in Nigeria is 80 million representing 60% of the country's total population and 64 million of them are unemployed while 1.6 million are underemployed. The insinuation is that it is possible that the training is not market driven and that the right set of trainees have never been selected to undergo the training. It is reasonable to understand that TVET can only achieve its objectives if it concentrates on the actual needs of the labour market and focus on the output, design flexible programme that serve the needs of production and service sector as well as learning experiences that best serve job requirements.

Sustainable Development: An Overview

Sustainable development originated from Brundtland commission Report of 1987 and according to the report, sustainable development is a development that meets the needs of the present without compromising the ability of future generations to meet their own needs. It is a development that involves living within the limits of what the environment can provide, understanding the interconnections between economy, society and opportunities. (Government of South Wales, 2013). To Munasinghe in Abubakar (2013) sustainable development is a process of improving the range of opportunities that will enable individuals and communities to achieve their aspirations and full potentials over a sustained period of time while maintaining the resilience of economic, social and environmental systems. From the above definitions, one could deduce that sustainable development is a development that meets the needs and aspirations of the present generations without depriving future generations of the resources required to satisfy their needs. It helps to ensure the satisfaction of both human and environmental needs without inflicting unnecessary harm on citizen. To this, Brown (1991) identified four dimensions of sustainable development as:

Ecological/Environmental sustainability-This is all about natural environment and how it remains productive and resilient to support human life and development. Environmental sustainability indicate that non-renewable and other natural resources are not depleted for short term improvement.

Economic sustainability-This emphasizes a system of production that satisfy present consumption levels without compromising future needs. It also implies that improvement do not depend on continuous infusion of resources that cannot be maintained.

Political sustainability- This requires that changes are consistent with present or emerging distribution of power in the society.

Cultural sustainability-This involves providing enabling conditions for everybody to have the capacity to realize their needs. It encompasses human right, gender equity and equality, public participation and rule of

law. Cultural sustainability suggests that changes must be consistent with core values, expectations and norms of the society.

Brown also highlighted the following as effective approach to sustainable development.

- a. Optimise the use of resources that are available locally.
- b. Minimise dependence on resources that must be brought in from outside
- c. Avoid seeking improvement from which continuous infusion of existing or new resources are needed.
- d. Conserve those resources that are needed for improvement over the long term.

To buttress this view, Brundtland Commission approach to sustainable development emphasized the need for new conceptions of global development that

- a. Took cognizance of the fact that social and environmental problems are connected.
- b. Recognise environment catastrophes experienced in one region somewhere affects the well-being of people everywhere.
- c. Recognise that environment stresses are not restricted to particular locality or geographic boundaries.
- d. Recognise that only through sustainable approaches to development could the planet's fragile ecosystem be protected and the aims of human development be achieved.

Sustainable development therefore is a holistic approach to improving the quality of life. It requires balancing environment, societal and economic considerations in the pursuit of development and an improved quality of life. Changes in any one dimension will have impact on the other dimensions. Human well-being cannot be sustained without a healthy economy and is equally unlikely in the absence of a vibrant economy.

Need for Transforming TVET for Sustainable Development.

The impact of technologies is rapidly changing the world of work by affecting pattern of occupational demand and requirements for workers. ILO (2011) reported that the transformation brought about by technological changes affects the demands for skills, altering the skill profiles of/ within occupations thus affecting training needs and delivery. With these changes workers already in the labour market as well as learners need to be updated with skills for new technology, market demands and government regulations in their field of work and business.

Education and training plays a pivotal role in this, because educational institutions provide people with the knowledge, skills and attitudes they need to be able to adapt to the changes that occur around them. Specifically, TVET remains the hope for not only closing the skill and technology gap but also narrowing the mismatch between the demands and supply of skills. UNESCO (2009) affirmed that TVET develop a skilled, committed and motivated workforce that understands how global changes impact upon local opportunities for business and industries and how these changes impact upon the quality of social, economic and environmental conditions. As already stated, the main objectives of TVET is to provide adequate and appropriate skilled craftsmen, technicians and technologists at all levels of the economy through practical training and work experience. Unfortunately, TVET graduates face mismatch of skills when they get to the labour market which forces industries to retrain them upon employment. Marope, Chakroun and Holmes (2015) opined that TVET potentials relevance to the world of work is critical. Its relevance however is challenged by skill mismatches which are growing across the globe rather than shrinking. Corroborating this view, World Bank (2008) stated that TVET is experiencing pressure to equip individuals with the skills needed in their new work settings. In other words for TVET to cater for the present and future needs of individuals, it needs to be both reactive (developing knowledge and skills relevant to the job that people hold or recently hold) and proactive (initiating change based upon anticipated work demands and lifelong possibilities) hence the need for transforming TVET for sustainable development.

Transformation is a process of allowing institutions to change, to adapt to the changing functions, expectations or to shift according to the changes in the functions over time. Transforming TVET for sustainable development according to UNESCO (2016) entails adapting learning environment, relevant content and training to transform the knowledge and skills that meet the needs of occupation and enterprise, respond to the shift in environmental as well as societal transformation affecting individuals choices and life styles. It involves improving on existing approaches in TVET so that trainees could be equipped with the skills, knowledge and attitudes needed to live and survive in their society as well as adapt the transformation of their society. To reflect trends, issues and needs in education for sustainable development UNESCO (2015) revised the goal of TVET to read

- To empower individuals and promote employment, decent work and lifelong learning.
- To promote inclusive and sustainable economic growth.
- To promote social equity.
- To promote environmental sustainability.

By integrating these key sustainable development issues into teaching and learning, learners will be motivated and empowered to change their behavior, thinking, as well as approaches for dealing with uncertainty and for solving complex problems.

Strategies for Transforming TVET for Sustainable Development.

In the era of fast changing technology, TVET becomes an important sector for accelerating sustainable development. TVET, to be able to achieve all round sustainability the following strategies have to be adopted among others;

Identifying training needs in the labour market: This is a mechanism used to update TVET programmes to better address future labour market needs and to provide stakeholders with the most recent information on the future needs of the labour market. TVET relies heavily on the currency and accuracy of labour market information systems and on forecasts of labour market trends. Pavlova (2007) stated that ensuring the responsiveness of TVET system to labour market demands requires an in-depth understanding of not only the skills needed to support the desired economic development but also the skills required in the short, medium and long term. Identifying current labour market demands for skills and also anticipating future demands is crucial in transforming TVET for sustainable development. The outcome of this effort will be translated into competency-based curriculum.

Curriculum Update. TVET curriculum needs to be expanded and renewed with respect to the production of the environment and resources. Pavlova in Okoli, Wejinya, Agam and Asufi (2016) opined that the current TVET curriculum is weak and not flexible enough to meet the technological changes and diverse needs of different clients thereby resulting to TVET graduates experiencing technology shock when they enter the job market. Today automation and computerization has taken transition and production jobs such as clerical works, assembly-line work, troubleshooting and repairs require technology skills. As a consequence, vast majority of jobs are at high risk of automation. To this, Okoli, Welinya, Agam and Asufi (2016) opined that Nigeria curriculum needs an overhauling to march the spirit of the century and to be able to produce individuals who will practice what is being taught.

Adopting appropriate pedagogical Approaches. Not only the educational contents need to be renewed, how the content is delivered is crucial to determining its success in fostering sustainable society. Innovative ways of delivering TVET programmes are needed in order to strengthen its effectiveness towards educating for sustainable development. Pedagogical approaches used in TVET delivery should be such that will appeal to the students variously, providing them with opportunities to discover ideas and facts in the real-world setting, through their own effort.

Maintaining safe and healthy learning environment: A healthy population and a safe environment are important pre-conditions for sustainable development. Hunger, malnutrition, malaria, water-borne diseases, drug and alcohol abuse, violence, insecurity, unplanned pregnancy, pandemic, HIV/AIDS etc are some of the problems that have enormous implication for education and training. The school environment must be safe and healthy for delivering of TVET programme. Schools should not only act as center for academic training but also as supportive venues for provision of essential health educational services.

Ensuring equal access to and participation in TVET: Sustainability will be difficult to attain without the inclusion of all groups in the society. For TVET to be able to develop learners to be better prepared for coping with the rapid technological changes in the economy and achieving sustainability those who had been neglected by the TVET providers for reason related to discrimination on lack of resources or opportunities, gender, disabilities, ethnicity e.t.c need to be included in TVET for sustainable development. UNESCO (2015) stated that TVET should cater for the present and future needs of all learners regardless of class, ethnicity, age disability, location or other socially ascribed traits. Regrettably in Nigeria gender, ethnicity, religion, caste, class, disability, location, HIV status and other factors of exclusion are used on daily basis to discriminate against some learners. Such discriminations may come through individuals by words and actions or at times institutionalized in curricula, timetables or facilities provided by TVET programmes as well as workplace. Access to traditional apprenticeship is often influenced by matters of ethnicity, gender and caste (McGreth, (2011).

Recognition of Qualification: TVET system need to introduce and expand qualification framework that recognizes qualification. Keevy (2011) opined that TVET system should develop mechanisms to enable credible and fair recognition of skills. Qualification framework aims at helping countries develop, improve, guide and assess the quality of their TVET system. It allows qualification to be recognized and understand across globe. This would facilitate mobility of workers thus enhancing competitiveness due to a larger potential pool of trained workers.

Improving youth employability: Ensuring that youth have the requisite skills for employability is important to sustainable development. No nation can achieve economic and social development without a skilled and productive labour force that can meet the changing requirements of its environment. Countries like Turkey, United Kingdom, Australia among others have focused on equipping students with skills that are

useful for self-reliance through apprenticeship, easing transition from school or training to work or jobs. Youths are also helped through developing on-line portal or worldwide communication network which provides information on job opportunities, career guidance and information on skill needs. The portal allows young job seekers to register with the goal of finding appropriate jobs and needs for new or upgraded skills so that they can survive in the labour market.

Strengthening linkages between TVET and Industries: This is also known as public private partnership, which involves private sector contributing to the public sector or vice versa. TVET could be transformed through strengthening partnership and stakeholder's involvement in skill development initiative such as apprenticeship and on-the-job training, industry involvement in curriculum development, education financing, scholarship programmes etc. Research has shown that public-private partnership has transformed India into economic super power as well as rapid growth and expansion of its middle class.

II. Conclusion.

The changing demands of technology, labour market, demography and migration identified the weakness in the current education system calls for education system more flexible and responsive to change. TVET may not be able to meet the urgent challenges brought about by these dimensions without considering the resourcefulness of its stakeholders and workforce. It is therefore concluded that transforming TVET for sustainable development is the best option. This demands that the learners and trainers irrespective of gender, location, race should be equipped with the necessary knowledge, skills and attributes in order for them to deliver skills for sustainability.

III. Recommendations

1. TVET providers should ensure that TVET cater for the needs of all learners irrespective of class, ethnicity, gender, age, location so as to be able to access TVET without discrimination and on an equal basis with others.
2. Federal, State and Local government should strengthen partnership and stakeholder involvement in TVET in order to match skills imparted by TVET system with those demanded by the labour market.
3. Employers at all levels should re-orient existing employees by acquainting them with new concepts and practices to improve their work processes.
4. Teachers must keep abreast of rapid development in their field of expertise and must be able to integrate new technologies into their teaching.
5. Ministry of education should provide or develop transparent mechanism to build trust between different education systems which make recognition of qualification across different countries possible.
6. Government at all levels should ensure that TVET institutions have adequate and conducive learning environment.
7. Curriculum planner should introduce new courses to address the occupational changes in the ICT job market so that students will be helped to develop, flexible, digital and financial literacy skills that will prepare them for new job opportunities that will open up in future.

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