Journal of Education and Practice
ISSN 2222-1735 (Paper) ISSN 2222-288X (Online)
Vol.4, No.14, 2013

Technical and Vocational Education and Training (TVET) In Nigeria and Energy Development, Marketing and National Transformation

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Abstract
Education is considered by many as an agent of human development, social mobility and socio-economic development of any society. However, it is arguable that the type and quality of education a nation offers to its citizens is a function of the level of progression of that nation. In this context, technical and vocational education and training (TVET) has been recognized as the wide-diversified education system instrumental in making the remarkable contribution to economic growth of a country by a way of suitable manpower production relevant to the needs of industry, society and changing technological work environment. This paper explores the TVET situation for Nigeria for its transformation agenda with highlights on such factors as trends on TVET policies for human resource development, capacity building, energy development and professional marketing in the national transformation agenda.
Keywords*:* Capacity building, energy development, human resource development, national transformation agenda, technical and vocational education and training,

1. Introduction

Education is a process of training designed to give knowledge, develop skills and abilities that could lead to the development of mental alertness and the right attitude to life. This implies that if education is adequately inculcated in human-kind, individuals would meaningfully help themselves and positively contribute to the growth and welfare of their immediate community. In essence, education remains the single factor that guarantees both individual growth and community development. Thus, if an individual acquires skills and the right attitude, and realistically apply the skills and right attitude for the benefit of his society, it means that education has helped to change (transform) the individual for better and pragmatically too.

Pragmatism involves thinking about (i.e. knowledge) and treating issues in a realistic and practical manner to achieve result rather than by theory (Collins English Dictionary, 2011). In other words, education is an agent of human development, social mobility and national transformation. It is a universal concept that differs from society to society (Okafor, 2012).

The form of education that place emphasis on pragmatic attitude as a priority (for individual and community development) is technical and vocational education and training (TVET). TVET is the form of education that advocates development of the head (*knowledge*), training of the hand (*dexterity*) and enriching the heart (*conscientiousness and painstaking*), - the 3Hs. TVET is a total deviation from the previous emphasis on 3Rs, - reading, writing and arithmetic, which was fundamentally a form of credentializing entry into elite status with its graduates/products roaming about seeking for the non-existing white collar jobs. *TVET is the education for those who need it, those who want it, and those who want to progress by it*. It is a result oriented form of education. It is not education for the dullards or educationally disadvantaged people.

The result oriented form education had been with and part of us – Africans. The problems that bedevil Africa today, could be traced to the colonial period. Colonization, simply put (Sifuna, 2001), was a mechanism of exploitation when colonial education was designed to serve the needs of the colonial country, by producing educated cadre of labour force without skills but trained to facilitate economic production in offices. In this wise, the colonial education placed no premium on promoting skills acquisition and capacity building on advanced professions in engineering, technology and allied courses for Africans. In many countries of African extraction, it is currently apparent that non-professional system of education is no more suitable for the desired human capacity building and national development.

The belief is that developmental mechanisms in Africa would be more progressive if Africans should pursue a kind of development which is endogenous to African environment. For instance, development (Sifuna, 2001) is not simply an economic process, but a complex whole that has to arise endogenously from deep down inside each society. It springs from the culture in question, and cannot be reduced to imitation of developed countries or societies. That is to say, people cannot be developed. They can only develop themselves (Nyerere, 1968).

This contention implicates that the international packages on education (that have been followed with disastrous consequences) should be resisted by Africans in favour of international co-operation that is more sensitive to the Africa's own designed development strategies. Contentiously therefore, what is required in Nigeria for human and industrial transformation is the system of education that totally make a break with rhetorics, semantics and all other past but ineffective mechanisms of knowledge acquisition. Thus, the system of education needed for the national transformation agenda is the education system that should place emphasis on knowledge, skills and values that are based on Nigerian setting in which the learners will live and work. Argumentatively, the transformation from rhetorics to value oriented form of education appears to be only viable with TVET, the education form which emphasis is on knowledge, skill, value and product. This paper therefore decided to look at the context of TVET and;

- *Trends on its policies for human and national transformation*
- *Human Resource Development and Capacity Building*
- *Energy Development in Human Resource for National Transformation*
- *Professional Marketing as a Factor in the National Transformation Agenda*

2. Trends on TVET Policies for Human and National Transformation

Much as we know, the world has tremendously changed for good. Most of these changes are inherent in science and technology. Hence, emphasis currently appears to be on applied sciences and applied technology. As a result, most jobs currently have become more complicated, and as technology changes very rapidly, 80% of jobs that people do require technical and vocational skills (Maclean, 2006). In this regards, TVET is therefore very crucial for developed countries to maintain competitiveness, crucial for countries in transition (like Nigeria) to serve as the driver for moving into a developed economy, and for the less developed countries, TVET is also crucial since the overall aim is poverty reduction.

Any of these categories (developed, developing or less developed) a country may belong, demands that TVET should be more focused on the ability to learn and to apply new skills, which is very essential for every individual, for every work place and for every country. This demand goes a long way to buttress on why the emphases of TVET mostly lie on the development of the 3Hs, i.e. the head, the hand and the heart.

Educating the head is important in order to develop a cadre of intelligent workforce, training of the hand is essential to raise army of highly skilled workforce in any work they may become engaged and to educate the heart ensures the moulding of the workforce into good and responsible citizens and patriots. Therefore, for effective human and national transformation, teaching and learning must shift from one-time-learning to life-long-learning and from what the teacher knows to what the learners (the community or country) needs. Instructions must not be based on teaching for the job people will do but on learning for self or paid employment. Implicitly, the curriculum of instruction must strongly emphasize competency-based TVET system that is anchored on a competency-based TVET training model. Thus, to prepare the learners (Nigerians) with this training model as a guide implicates that training must be industry-oriented and partly conducted at the workplace under actual work conditions. This is referred to as dual training system (DTS) with the recognition that TVET should be inter-linked with the actual workplace. In this manner, the industry (actual workplace) serves to transmit the specific work skills and as well the classroom for acquiring the necessary related theory contents.

The highlight here is that if Nigeria should achieve adequate human development and national transformation through TVET system, efforts must be directed at producing workforce with higher level of requisite technical knowledge and thinking skill. In so doing, TVET would have helped in moving the workforce into environmentally conscious practices that address environmental, economic and social sustainability, while meeting the needs of industries and individual learners.

3. TVET and Human Resource Development and Capacity Building

One outstanding mandate of TVET is to provide individuals with learning experiences and training that equip them with skills to manipulate their natural environment and nurture development for their immediate community and the nation in general. To manipulate and nurture development hinges on research activities to improve on technological arts meant for both domestic and commercial utilisation. As Gbenedio (2012) puts it, peoples' search on technology tools enhances their information search and directs them on how to make use of such tools. The kind of research undertaken by scholars in any community or country could increase human capacity for the nation's economy.

From most literature, one of the problems that inhibit meaningful research output in technology and vocational training is high unit cost. May be by error of unabated corrupt tendencies or error of commissioned collaboration involving management and those delegated to ensure implementation, what appears deliberate under-valuation of research on TVET projects and policies has been reoccurring in Nigeria. Consequently, not much has been

achieved in Nigeria in respect to TVET comparably.

For instance, the core mandate to link industry and school activities on TVET programs in order to facilitate research and skill acquisition, the stakeholders in TVET programs have not shown adequate commitment to actualize that. The stakeholders in quote are; management of all institutions offering TVET programs, all levels of government in the country and affiliate individuals of professional repute in TVET and other development agencies, local or international. In Brazil, the policy, "link industry with school activities", was implemented. Subsequently, graduates of the TVET program in that country become employed in the industry on graduation. Currently, most of the luxurious buses plying Nigerian roads are imported from Brazil as dividend from good TVET program of that country. Also, Onyedika (2012) observed that the second largest plant which generates about 140,000MWatts located in Amizon wilderness in Brazil was facilitated by a group of professional experts who went through TVET programs in that country.

The next aching problem is the absence of clarity of aims and objectives on TVET programs in Nigeria. Most professionals in TVET seem not to understand what their professional responsibilities are due to their own poor up-bringing in the field. The popular saying goes that, a teacher does not give what he has not. Some even appear naive about the changes in the labour market and would never want to follow the trend to effect changes in the curriculum. Just as Onyedika (2012) puts it, one of the problems among Nigerian elites is that they are totally unwilling to effect educational changes that are likely to undermine their selfish interest.

On the other hand, many TVET instructors find it difficult to transform theories into practice. *The idea of I see I know, and when I do I remember is negated*. As such, instructions in the field appear to be abstract and which in most cases are delivered on out-dated machines and equipment that are no more in use. At the end of the day, the objectives of TVET emphasizing skills, utility values and product are not achieved. The products of the program then turn out to become job seekers instead of being engaged in meaningful self or paid employment. Subsequently, the community appears to settle down with a view that seems to classify TVET programs as destitute vocation and with low status accorded to the graduates of the program even by their fellow graduates in other fields. This low status accorded to TVET program by Nigerians has been a long standing problem against human resource development and adequate human capacity building in TVET programs in Nigeria.

The national transformation agenda might be a mirage if serious and due attention is not given to correct the negative impression Nigerians develop against TVET system of education. The teachers of technology must be mindful of this fact as to make amend. Bukit (2006) suggested that teachers of technology should as much as possible inject flexibility in their instructional processes which should be based on articulation between courses, credit transfer and recognition of prior learning through practical assessment of skills and knowledge of students. More so, the Nigerian government should find a means to cause local citizens to begin to focus on trends of the future in non-traditional ways by creating a platform where they should participate in community research and development involving their local arts and culture.

Like Odinma in Aderibigbe (2011) asserted, culture that recognizes and rewards talent and industry promotes economic and social development. Thus, as part of its implementation packages, the national transformation agenda should focus on culture that creates an environment in which every person takes pride in what he does.

4. TVET and Energy Development in Human Resource for National Transformation

This passage is centred on analogy drawn from concepts. Scientifically, energy is the ability to do work. Energy could be of many forms; such as, mechanical (including sound), electrical, thermal, light (radiant), chemical and nuclear energy (TutorVista, 2012). In physics, energy describes the capacity to produce certain changes within a system, without regard to limitations in transformation imposed by entropy (i.e. equal level of energy distribution in a system), (Wikipedia, 2012). Energy can change from one form to another. This is called energy transformation or energy conversion. The ability (potential qualities) in human-kind can be converted for use through knowledge and skill acquisition as a result of teaching and training activities. Since energy is the ability to do work, it implies that a practical work performance cannot be done without skills necessary for such job.

The human-kind who utilizes the knowledge and skills acquired as a result of teaching, learning and training to solve any existing problem has changed from what he was to what he has become anew. Thus, the potential in that individual has developed (changed) to a higher order form for the services of human-kind. In other words, the individual has acquired ability (capacity) to solve his problem and as well provide for others, consequent upon the skill acquired. This is called human capacity building. That is to say human capacity building is achieved when the potential qualities (energy) in an individual is converted into a form that enables the individual to solve a problem which ordinarily he could not have solved.

The capacity so developed could be applied practically or theoretically for good and services of man-kind. The practical or theoretical application of one's potential requires some measure of mastery. If this mastery is specifically directed, such individual is said to be a professional in his area of mastery. It implies that only those who could comparably demonstrate professional mastery in a given field should be hired to do some specific

professional works irrespective of one's creed or clan. This goes to say that employment in professional areas such as engineering and technology must be void of ethnicity or nepotism.

Unfortunately, these factors of social affiliation, ethnic sentiment, nepotism, quota system and other social rejects form the basis on which most appointments are made into sensitive positions in Nigeria rather than on ability and competence. The implication is that decision making would be handled by mediocrities and then recycled by the misinformed citizens of the country. In the long run, many government parastatals and agencies are controlled by individuals who cannot provide sufficient leadership qualities that will help sustain development (Aderibigbe, 2011). To achieve the Nigeria national transformation agenda especially in engineering and technology, appointments should be based on what individuals know but NOT on who they know. It should be based on competence but not on social affiliates and nepotism.

5. TVET and Professional Marketing as a Factor in the National Transformation Agenda

TVET propagates the application of principles and theories derived from applied technology for the welfare and services of human-kind. Just as the literal education of the pre – democratic period and colonial era needed the 3Rs – (reading, writing and arithmetic), for service excellence, the demand of the labour market today is a total deviation from the past. The 3Rs of the colonial era emphasized rhetorics that were more useful for white collar jobs and other cosmetic job ethics.

Currently, the technology driven economy requires participatory job ethics in which individuals are rated on what they can do practically. In other words, the labour market presently finds no place for individuals who cannot perform, but interested in and curious about what individuals can offer practically and pragmatically. Therefore, for an individual to be marketable in the labour market, he must sufficiently be oriented to show aptitude in skills and practical performance. This informs that sound education in TVET is core to whatever one tends to do for a living in the current dispensation that demands labour productivity.

Unfortunately, education on technical and vocational training for skills acquisition suffers the most neglect. The sector is underfunded, the basic infrastructure needed to facilitate teaching and training is lacking virtually in all institutions offering programs in technology and vocational education. There are lack of machine shop (workshop) rooms, and where they exist, the machine, equipment and facilities therein are in most number obsolete and in some cases housed in dilapidated building packed with junks, the prevailing curriculum on TVET is antiquated and without current issues, there is acute shortage of experienced technology instructors in the country and most of the few available do not possess the necessary skills for practical activities, there is neither retraining scheme to keep teachers of technology abreast of the rapidly changing labour market nor do institutions offering technology education conduct production-based activities where TVET teachers could undertake their practical orientation on research and development.

Regrettably, these indicators of neglect, poor and inadequate provisions for skills acquisition through TVET system makes it relatively difficult to achieve the goal on marketable labour force in the country. What is obvious is that there is structural shift of worldwide economy as a result of science and technology innovations (Bukit, 2006). This policy shift has changed and affected the characteristics of labour market which currently seeks for labour force with sellable skills. It is a belief that if students are adequately provided for in knowledge and skills, these learners will not only secure paid employment but could as well become self-employed and economically productive. In this disposition, it is possible that most Nigerians will begin to develop new capacities to deal with the impact of changes in the society.

With these obvious necessities, the need to invest in TVET by the Nigerian governments (Federal, State and Local) cannot be over emphasized. Hence, in the national transformation agenda, no progress will be made without adequate and enabling environment created for a paradigm shift from the transitional emphasis on rhetoric knowledge to the more modern and holistic TVET delivery system. This will be achieved only if the neglect indicator practices against effective education in TVET system in the country are ameliorated.

6. Conclusion

As Nigeria initiates national transformation agenda in order to sanitize the society, it may be funny to state that transformation does not just occur. It involves a change that restructures the innate nature of what has existed in the past, such as; introduction of new techniques or methods, change in the way people think and do things, change in ideas and leadership methods, and so on. As such, people tend to resist some initiatives imbued in a true transformation objective because most people do not suddenly change at circumstances unless the need for change is understood. Rick Smyre (2009) has this to say, until individual sees the need for change, no true change can occur because of the struggle and commitment that is necessary. The implication to the national transformation agenda is to create enabling environment that gets every individual (Nigerian) see the need for change and conclude within one self that there is need for transformation. This is possible when honest and transparent initiatives are pursued.

It may be quickly suggested that since TVET system plays a key role in human resource development and human capacity building, every effort should be made to address the retrogressive indicators against adequate education on TVET system in Nigeria. In this regard the following are recommended;

1. Appointment into instructorship positions in this field of study should strictly be on merit and competence. It should be void of nepotism, ethnicity, quota system, or social affiliates. When incompetent professionals are engaged in any human endeavour, the system will have no option than to end in a quagmire and the already existing poor situation exacerbated.
2. Retraining packages should be organized for the teachers of technology to keep them abreast of new entries into technology.
3. The campaign to become one among the 20: 2020 world class economy through her national transformation agenda, Nigerian governments should fund research activities adequately. It is through research activities that new technologies are unveiled and the already existing ones adapted.

4. There should be a paradigm shift from theoretically based education to practically and research oriented system of education in Nigeria.

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