

Re-Engineering Vocational and Technical Education for Creativity, Innovation and Youth Empowerment in Nigeria

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Abstract

Vocational and technical education is a type of education that equips youths and adults with occupational skills for self or paid employment for sustainable livelihood. A robust attention of the government towards vocational and technical education is capable of equipping the teaming Nigerian youths with saleable entrepreneurial skills for meaningful technological development and survival in the present economic recession. The achievement of sustainable economic development through skill empowerment of the youths requires collaborative efforts and strong commitments on the part of educational institutions, training providers, employers and government. This paper x-rayed the role of vocational and technical education in nation building, the relevance of VTE in creativity and innovative development of the youth, unemployment among Nigeria youth, national insecurity implication of youth unemployment, VTE and youth empowerment, the inter-linkages among the major variables of interest in a functional VTE structure and multidisciplinary approach to VTE development for youth empowerment. Effort must be made to mobilize the youth for nation building through government developmental plans to offer them the right opportunity to showcase their talents, gifts, creative thinking and innovative capacity. To achieve this, it was recommended among others that vocational and technical education research findings should be recommended and properly implemented, infrastructures and other facilities such as workshops, computers, machinery, constant electricity, water etc should be provided in our vocational and technical institutions so as to facilitate the teaching/learning process.

Keywords: vocational and technical education, creativity, innovation, youth, empowerment.

Introduction

The dynamism of sustainable development in different fields of science and technology requires constant improvement in curriculum contents, organization and effective training of individuals in vocational and technical education. Vocational and technical education is a type of education that equips youths and adults with occupational skills for self or paid employment for sustainable livelihood. Onjewu (2007) described vocational and technical education as that aspect of education that prepares people academically to be engaged in the acquisition and application of science and modern technology by focusing both on the theoretical and practical application of basic scientific principles.

As presented in the National Policy on Education (2014), vocational and technical education is an aspect of education which leads to the acquisition of practical skills as well as basic scientific knowledge. It is also a type of education meant for able citizens of a nation to empower them with relevant saleable skills to make vital contributions to the economic growth and development of their society. In affirmation, UNESCO (2002) described vocational and technical education as an integral part of general education for preparing people for occupational fields for effective participation in the world of work in order to promote sustainable development and a method of facilitating employment generation and poverty alleviation. If properly managed, the Nigerian vocational and technical education is multifaceted enough to provide means of livelihood to the teaming population in various trades of endeavour. For instance, the report of NCCE (2012) highlighted vocational programmes in Nigerian tertiary institutions to include: Agricultural, Business, Fine and Applied Arts and Home Economics Education while Technical education is

delineated into: Automobile, Building, Electrical/Electronics, Metalwork and Woodwork technology. Therefore, if the human and material resource base of the country is properly harnessed, the observed robustness of Nigerian vocational and technical education has the tendency to reverse to dwindling Nigerian economy and security challenges.

This is in alignment with National Policy on Education (FRN 2014) which described the goals of technical and vocational education to include: (i) provision of trained manpower in applied science, technology and business particularly at the craft, advanced craft and technical levels; (ii) provision of technical knowledge and vocational skills training necessary for agricultural, commercial and economic development and (iii) giving training and impart the necessary skills to individual who shall be self-reliant economically.

Vocational and technical education has been a fundamental feature in development strategies of many developed countries like United States because of its impact on productivity and economic development. Despite the overwhelming recognition of its roles in nation building, vocational and technical education in Nigeria has been regarded as an inferior or second class type of education. In affirmation, Dike (2005) stated that despite the contributions of VTE, Nigerian leaders have not given this aspect of education the attention it deserves. Unfortunately, this neglect has accorded this important field of endeavour a very low acceptance most especially among the youth. Hence, there is an urgent need for an effective round table discussion on revitalizing vocational and technical education in Nigeria to sustainably meet the occupational yearnings of Nigerians and productive capacity need of the nation through reengineering of the system.

Reengineering is a systematic starting over and reinventing the way a system gets its work done. Vavrus and Fletcher (2006) described reengineering as fundamental rethinking and radical redesigning of organisational process to achieve dramatic improvement in critical measures of performance such as cost, service and speed. The goals of reengineering include increased competitive advantage and enhanced public image. In the context of this paper therefore, reengineering means concerted effort to strategically reactivate and mobilize the required human and material resources to restructure the failing Nigerian vocational and technical education system for enhanced acquisition of saleable skills for self and paid employment of the teaming unemployed Nigerian youths.

Youth, according to United Nation General Assembly (1995), are young people of 18-35 years age bracket. Sharing a similar view, Izuchukwu (2015) described youth as any individual within the age of 18 to 35 years irrespective of gender or sex. The Nigerian youth population according to the 2006 national census is almost a hundred million representing about 60% of the total population (National Population Commission, 2006). By implication, the youth constitute the backbone of the development of any nation considering their natural energy and intellectual endowment.

Highly worrisome is the current level of unemployment among Nigerian youth which implies gross deficiencies in the training acquired and application of skills possessed by them. Youth unemployment in Nigeria has increased tremendously due to their lack of relevant marketable skills for self or paid jobs. The increasing rate of unemployment among Nigerian youth among other factors is responsible for the escalating poverty index and anti-social behaviours such as involvement in all form of criminal acts. It is a common adage that *an idle mind is a devil's workshop*. Hence, Awo (2006) suggested that, vocational and technical education has positive functional relationship with the level of skill possessed and utilization of the acquired skills for gainful employment and sustainable livelihood. Indeed, if Nigeria is to be sustained as a viable entity, there must be a very good plan to tap the energy and resourcefulness of the youth population to fast track economic development through improved creativity and innovation for their empowerment.

Creativity is the act of turning new and imaginative ideas into reality. According to the report of World Bank (2000), creativity is characterised by the ability to perceive the world in new ways, to find hidden patterns, to make connections between seemingly unrelated phenomena, and to generate solutions. It is the process of bringing something new into being, it requires passion and commitment, it brings to our awareness what was previously hidden and points to new life. Creativity involves two processes: thinking, then acting. For instance, a graduate of vocational and technical education with good ideas but without action is only imaginative but not creative. Therefore, creativity is the price of development while innovation pays the bills.

Innovation on the other hand is about introducing change into relatively stable systems. The US Department of Labour (1999) described innovation as the implementation of a new or significantly improved product, service or process that creates value for business, government or society. Innovation is also concerned with the work required to make a creative idea viable. By identifying an unmet need in national development for instance, the country can use innovation to apply its creative resources to design an appropriate solution and reap a return on its youth empowerment. To be a youth, full of energy and potential is good but empowering the youth for productive use of their natural strength and endowment is imperative for peace, employment generation and poverty reduction.

Empowerment symbolises effort to encourage or assist somebody for meaningful living. Hence, Vavrus and Fletcher (2006) described youth empowerment as an attitudinal, structural and cultural process whereby young people gain the ability and authority to make decisions and implement change in their own lives and the lives of other people around them. Therefore, youth empowerment in Nigerian context can be viewed as an integral gateway to intergenerational equity, civic engagement and democratic building through reengineering of vocational and technical education for improved creativity and innovativeness of the youth for productive living. Awo (2006) observed that effective performance of vocational and technical education in today's scared labour market requires proper training of students in the practical application of skills and knowledge gained to address their unemployment and consequently poverty challenges.

For better understanding of this piece of write up, the paper begins by conceptualizing the major variables of interest followed by the role of VTE in nation building. The detailed synthesis of the relevance of VTE in creative and innovative development among youth was also presented. The worrisome situation of alarming youth unemployment in the country and the link with national insecurity was presented. A close tie between reengineered VTE and youth empowerment was established while a schematic representation of the functional relationship among the major stakeholders in the Nigerian education system towards a purposeful reengineering of VTE was sketched. A clear comparative presentation of the state of VTE in Nigeria relative to developed countries was x-rayed while multidisciplinary approach to the development of vocational and technical education was technically synthesized. Finally, the paper was concluded while recommendations were drawn for implementation by collaborative efforts of major stakeholders in Nigerian youth empowerment and vocational and technical education.

The Role of VTE in Nation Building

Nation building or development has to be sustainable in practical terms. Therefore, vocational and technical education having the capacity for sustainable development is recognized world over as a tool for empowering youth and able adults with saleable skills for quality living and social-economic development. Amedu (2013) noted that vocational and technical education constitutes a vital engine for economic, social, practical and all round development of any nation. It also impacts on the overall development of the individual and society. This is because,

vocational and technical education is the hub of economy of any nation that desire genuine development.

Substantiating this fact, Rashtriya (2005) pointed out that, the wealth and prosperity of a nation depends on the effective utilization of its human and material resources through vocational education and industrialization. Akpomie (2009) in his own view also emphasized that no nation can move forward technologically, industrially and economically without developing a strong partnership initiative in the creation of wealth, poverty reduction and employment generation with required vocational skills.

Other intrinsic benefits of vocational and technical-based education to nation development include: its service as learning and training centre for the translation of dreams and ideas into successful ventures, building technical and conceptual skills in the individual that prepares him for today's world of work, technological advancement of the nation, reduction of poverty and idleness, creation of self-reliant and sustainable means of livelihood, increased self and paid employment among the youths and able adults, improvement of standard of living, sustained political stability, reduced crime and insecurity resulting from productive engagement of the youth and reduced poverty, insecurity and anti-social behaviours such as *Boko Haram* insurgency, armed robbery, kidnapping, bunkering, militancy, political thurgery, prostitution, child and women trafficking among others.

The Relevance of VTE in Creativity and Innovative Development among Youth

The development of any nation hinges on the social and economic contributions of her citizens through vocational and technical training to promote community and national development (Oguntuyi, 2013). This is because, vocational and technical education is that aspect of education that enhances the acquisition of applied skills and basic scientific knowledge to facilitate creativity and innovation among the youths (Career and Technical Education, 2009). The relevance of vocational and technical education is further showcased in its exploration of career options, supports for basic skills, preparation of skilled individual for industry and leverage to stimulate creativity and innovation for technological growth and development.

Therefore, it is pertinent to note that no meaningful progress can take place in any society, Nigeria inclusive without the development of the creative and innovative ability of the people through affective, cognitive and psychomotor attributes of a functional vocational and technical education. Hence, any nation that intends to remain viable and competitive in the present day global economy has no other choice than to stimulate creative thinking and innovation among the youths through a functional vocational and technical education system.

In making Nigerian vocational and technical education more responsive to nation development, efforts must be made by successive governments and stakeholders to support the elements of creativity and innovative development in the system through helping the youth to synthesise their ideas, be more analytical and practical.

- i. Synthesis in this case is creating a platform that helps the youth to generate ideas that are novel, high quality and task appropriate. This involves ability to redefine problem effectively and to think insightfully.
- ii. To be analytical means to be critical in creativity thinking to judge the value of one's own idea to evaluate strengths and weaknesses and suggest ways to improve them.
- iii. Practical ability involves effort to apply intellectual skills in everyday context and to sell creative ideals.

Youth Unemployment in Nigeria

Unemployment or joblessness, as defined by the International Labour Organization (2004) occurs when people are without jobs and they have actively sought work without being

employed. Unemployment rate is a measure of the prevalence of unemployment and it is calculated as a percentage by dividing the number of unemployed individuals by all individuals currently in the labour force (Salami, 2013). According to the National Bureau of statistics (2010) the general unemployment rates irrespective of age group in Nigeria between 2001 and 2009 was 13.6% in 2001, 12.6% in 2002, 13.4% in 2004, 13.7% in 2006, 14.9% in 2008, and 19.7% in 2009. With respect to age group, about 58.6% of the youth are unemployed (Ruhl, 2011). In affirmation, the Federal government recently acknowledged that about 60 percent of Nigeria's youth are unemployed while 10 percent are underemployed (National Bureau of Statistics, 2010). The table below present a clearer picture of high rate of unemployment among Nigerian youth (male and female) as at 2012.

Year	Male	Female
2008	41.50	58.50
2009	42.18	57.82
2010	45.48	54.52
2011	49.15	50.85
2012	44.58	55.42

Table 1: Unemployment among Nigerian Youth by Sex Gender

Source: Nigerian Institute of Social and Economic Research (NISER), (2013)

The steadily high rate of unemployment among Nigerian youth irrespective of gender as presented in the table has further worsened the deteriorated level of poverty and insecurity in the country. The report of Nigerian Bureau of Statistics (2016) showed that about 1.5 million Nigerians who were previously employed loss their jobs and became unemployed in the first quarter of 2016.

Youth Unemployment and National Insecurity

In security is the degree of lack of protection against danger, damage, loss and crime (Shettima, 2012). The present insecurity challenge rocking Nigeria nation is a major concern to any reasonable and development-conscious Nigerian. It very unfortunate that the development of a nation endowed with rich human and material resources is truncated with all form of insecurities ranging from food, financial, religious, political and generally insecurity of lives and property. For instance, the continuous destruction of innocent lives and property through insurgency of Boko haram sect in northern Nigeria within the past few years is heartbreaking. Also, the alarming cases of kidnapping, oil bunkering, vandalism of public amenities, child and women trafficking, illegal baby factories, political thurgery, armed robbery, prostitution among other anti social vices are resultant effects of youth unemployment.

The effects of insecurity resulting from youth unemployment as observed by Shettima (2012) include: indiscriminate loss of lives which runs to thousands, the dislocation of local economy due to threats to lives and property, bombing and burning of economic property and goods and the psychological trauma of victims and survivors of the crisis especially children and young adults. Youth constitutes about 60% of the total population in the country out of which about 64% are unemployed (National Bureau of Statistics, 2010). These unemployed youth fall into different categories such as illiterate, street boys, school drop outs, secondary school leavers, unemployed graduates of tertiary institutions, underemployed graduates who are employed in professions that are irrelevant to their field of training and are therefore underpaid. Okeh (2013) emphasized that as long as these categories of Nigerian citizens are not gainfully employed, the

issue of security will be far beyond reach in Nigeria. Adejumo (2011) noted that, where there is no adequate security, there can be no meaningful development.

It is imperative to note that, the present rate of unemployment among Nigerian youth is one of the major benchmark for measuring the nation's socio-economic development. The energy and activities characteristic of the youths are being channelled towards counter-productive directions which seriously impinge on youths restiveness. Apart from many lives and property that are lost to insecurity challenges, many Nigerians have also lost their businesses and means of livelihood hereby aggravating the unemployment and poverty situations in the country. Therefore, efforts must be made to rechanneled and re-orientate the teaming Nigerian youth into productive sector of the economic through job creation which can only be ensure through reengineered vocational and technical education.

Vocational and Technical Education and Youth Empowerment

Vocational and technical education plays an essential role in improving the wellbeing of youths and communities. It increases productivity, empowers the youths to become self-reliant and stimulates entrepreneurship (Alhassan and Abdulahi, 2013). Youth empowerment by vocational and technical education is therefore a sure means to aid sustainable development if utmost consideration is given to the sector.

The derivable benefits of skill-based empowerment of the youth to the overall advantage of the nation include:

1. Poverty eradication which can be assured when the youths are engaged with economic and life sustaining activities.
2. Reduction in crime and insecurity through youth empowerment programme.
3. Youth empowerment increases technological development of a nation.
4. Increased employment creation is also assured through youth empowerment as they will be gainfully employed to create jobs for other vulnerable groups in the society.
5. Skill-based youth empowerment increases creativity and innovation tendencies of the youth for quality livelihood.
6. Increased entrepreneurship for amplified Gross Domestic Product (GDP), employment generation and robust economy.
7. Assured transparent social and political systems. This is because, economically engaged youths cannot in any way be available for thurgery, rigging among other anti-social vices.
8. A well structured VTE empowerment programme will improve the level of education of the general public because, the youth form the greater proportion of the world population.
9. Youth empowerment with relevant vocational and technical skills reduces the dependability of the youth on parents and government.

Based on these highlights, it must be pointed out that the present state of neglect of youth empowerment is socially injurious, as it robs the nation the contribution the youths would make to national development.

The State of VTE in Nigeria Relative to Developed Countries

The 2nd International Conference on vocational and technical education held in Korea 1999 set the mission for all nations to use VTE to address the employment and or other socio-economic challenges of the 21st century. These challenges according to UNESCO (2000) include globalization, political integration, trade liberalization, an ever changing technological scenario, ICT revolution and the consequent rapid pace of social change. In the conference, it was concluded that vocational and technical education shall produce more job creators than job seekers. Unfortunately, the case of vocational and technical education in Nigeria is significantly different due to its numerous challenges. For instance, Olaitan (1994) lamented that the

administration of vocational and technical education in Nigeria is in the hands of general educators with less understanding and interest of vocational education. This makes vocational and technical education subjects receive less attention in terms of implementation of favourable policies, appropriation of funds, provision of equipments, recruitment of qualified staff and production of skilled manpower for work. In affirmation, Dike (2005) noted that while vocational and technical education has continued to thrive in many societies, Nigeria has neglected this important aspect of education. Consequently, every facet of the economy has been affected by lack of skilled technicians.

It is quite unfortunate to state that most of the so-called “expatriate engineers” who are being paid millions of dollars to build Nigerian roads, bridges and railway lines are graduates of technical and vocational colleges of their respective countries such as United States, China, Japan among others. The United States is not the only country that appreciates skills acquired through vocational and technical education, the Dutch school system also pay more attention to vocational centers that offer vocational training for lifelong trade together with general academic studies.

In Singapore, apart from policy shifts to align education systems with economic development, the barrier of poor public perception and image of TVET was overcome by making basic workshop subjects such as metalwork, woodwork, technical drawing and basic electricity compulsory at secondary level. In Germany, the dual system of vocational training was adopted. This system allows for training in public vocational schools and concurrently in a privately-owned registered businesses or entrepreneurship agencies. In addition, China, India, Japan, Korea and Indonesia to mention but few, could not have become what they are today without massive investment and favourable policy formulation and implementation in vocational and technical education. Yet, Nigerian leaders do not take vocational and technical education very seriously in meeting her present security and socio-economic challenges of the nation. Regrettably, the present formal vocational and technical education system in Nigeria is operated in environment that is characterized by:

- i. ***Inadequate funding of VTE:*** It is imperative to state that funding to VTE in Nigeria is still grossly inadequate relative to its significance in nation growth and development.
- ii. ***Dearth Quality Training and Expertise:*** The present quality of training in vocational and technical education is low, with undue emphasis on theory and certification rather than skill acquisition.
- iii. ***A Disconnect between VTE training centres and labour market:*** There is inadequate partnership between the VTE training institutions and industries.
- iv. ***Poor Image of VTE:*** For many years, vocational and technical education has been considered as a career path for the less academically endowed individual or a never do-well.
- v. ***Administrator’s misconception of the nature of VTE:*** Technical managers in Nigeria are essentially managers who have grown without any technical background or training. This negatively affects vocational and technical education system in Nigeria through poor planning and administration.

Other challenges undermining the contribution of vocational and technical education to Nigerian economy include: poor remuneration for vocational and technical teachers and other personnel, lack of proper implementation of the Students' Industrial Work Experience Scheme (SIWES), inadequate political will by the government, deficit educational monitoring and evaluation procedures, problem of curriculum implementation of VTE programmes, over concentration of limited vocational and technical education institutions in urban centres, high cost of importing machinery and equipment, declining students’ attitudes in vocational and technical education

programmes and the poor state of infrastructural facilities in the institutions that offer vocational and technical education programmes.

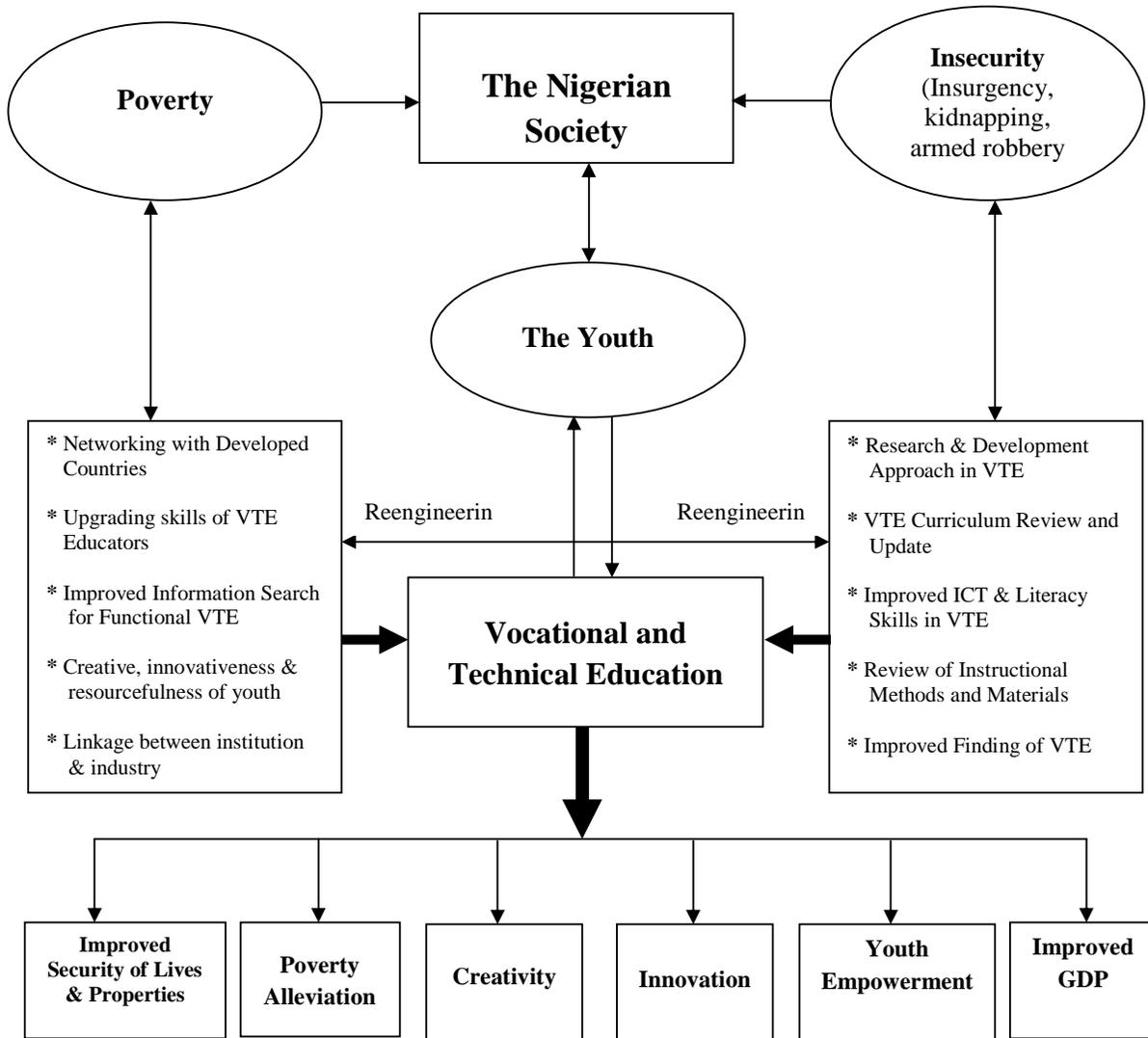


Figure 1: Schematic Representation of the Conceptual Framework

The figure 1 above presents the inter-linkages among the major variables of interest. Poverty and insecurity constitutes parts of the major challenges of Nigeria state. The youth are at the central stage of these challenges. To address the challenges of youth restiveness, poverty and insecurity in Nigeria, concerted effort must be made to reengineer the vocational and technical education aspect of the nation education sector. The resultant positive implications of the reengineering approach has the tendency for improved security of lives and properties, poverty alleviation, creativity, innovativeness, youth empowerment through self and paid employment and improved gross domestic product (GDP).

Multidisciplinary Approach to Vocational and Technical Education Development: A Reengineering Strategy in Nigeria

Traditionally, school curriculum has been largely based on the concept that instruction should be separated into distinct subject areas for ease of understanding. Hence, Adelman (1989) observed that the integration of school subjects as a credible solution to developing a more relevant approach to teaching and learning has gained significant attention in recent years. The multidisciplinary curricular approach to vocational and technology education seeks to help students learn and appreciate the relevance of how other subjects can be tied together and how they builds on vocational and technical education. Awo (2011) suggested strategies for enhancing coalescence of disciplinary knowledge in vocational and technical education to include:

- i. Creating an effective networking between Nigerian vocational and technical education with that of developed countries with functional vocational and technical education system such as United States, China, Japan, Singapore, Germany, Korea and Indonesia to mention but few.
- ii. Updating of knowledge and skills of vocational and technical educators for lifelong learning through self improvement programmes such as in-service training, conference, workshop in relevant new knowledge.
- iii. Going beyond the fields of vocational and technical education to search out needed information which can enrich the field.
- iv. Acquisition of relevant special skills which are not mostly taught in the classrooms and laboratories. These include: problem solving skills, creativity, innovativeness, resourcefulness, adaptive skills, enthusiasm and tolerance.
- v. Research and Development (R & D) are very essential for synthesis of useful empirically-based information for improvement of vocational and technical education.
- vi. Acquisition of ICT and literacy skills is paramount to the realization of the stated objectives of vocational and technical education.
- vii. Curriculum review and course restructuring in vocational and technical education should be done on regular basis for integration of current ideas in other fields of endeavour to meet the immediate and future needs of the society.

Conclusion

From the discussion so far, it is apparently clear to state that vocational and technical education is a veritable tool for empowering the Nigerian youths. Because, it is capable of offering the youth self and paid-employment and entrepreneurship skills which are necessary if the nation is to make meaningful strides in her quest for technological development. Once the nation's youths are properly empowered, sustainable development is assured. The achievement of sustainable economic development through vocational and technical education for youth empowerment requires collaborative efforts and strong commitments on the part of educational institutions,

training providers, employers and government. This is necessary because, the youths being the strength of the economic today are leaders of tomorrow. Therefore, effort must be made to mobilize the youth for nation building through government developmental plans to offer them the right opportunity to showcase their talents, gifts, creative thinking and innovative capacity.

Recommendations

In addition to the suggested multidisciplinary strategies for enhancing coalescence of disciplinary knowledge in vocational and technical education, the following recommendations will also be helpful in making Nigerian vocational and technical education system more responsive to skills, creativity and innovative needs of the youths:

1. qualified manpower should be employed and they should be properly remunerated and motivated to put in their best in training the students under them;
2. Vocational and technical education research findings should be recommended and faithfully implemented to the letter;
3. infrastructures and other facilities such as workshops, computers, machinery, constant electricity, water etc should be provided in our vocational and technical institutions so as to facilitate the teaching/learning process;
4. all Universities, Polytechnics, Colleges of Education in Nigeria should forth establish technical and vocational education courses for empowerment, employments for economic recovery, job creation for sustainable development of Nigeria;
5. students on SIWES schemes should be made to carry out their training in only job areas that are directly relevant to their fields of specialization in school;
6. Government should encourage entrepreneurship by providing the necessary credit facilities to graduates of vocational and technical education to set up small -scale industries;
7. Federal, state, and local agencies should provide a clear vision and mission for vocational education and training;
8. a balanced approach should be emphasized in the school curriculum through the integration of technical, employability, generalized, creative and innovative skills in vocational programmes.

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