Technical Vocational Education And Training (TVET) And The Nation’s Industrial Development

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ABSTRACT

This paper focuses on the perceived roles of technical vocational education and training in enhancing rapid industrial growth and development. The paper dwelt on the historical overview of technical and vocational education in Nigeria; it highlighted some features of technical and vocational education, industrial productivity and the roles of technical vocational education in the development of industries. It also examined the benefits of technical and vocational education to power and industrial development while challenges of technical and vocational education were mentioned and discussed. Strategies for enhancing industrial development through technical and vocational education were enumerated. Some of the recommendations proffered are technical and vocational education should be integrated properly into the general education system as to minimize high rate of unemployment among the youth; guidance and counseling services should be properly provided and strengthened in all schools in the country as to enable students understand and appreciate the value of technical and vocational education as a catalyst to the success of the national transformation agenda.

Keywords: Technical Vocational Education and Training; Industrial Development; Nigeria

INTRODUCTION

It is quite obvious that education is the key to increased productivity. In line with this view, Okolocha (2006) stated that technical and vocational education is the bedrock of sustainable development of any nation. Vocational education is defined by the National Teachers’ Institute (NTI, 2008) as the type of education that involves the use of the right instructional devices, methods, techniques and knowledge for developing skills. Similarly the Federal Republic of Nigeria (2004) defined technical education as that aspect of education that leads to the acquisition of practical and applied skills as well as basic scientific knowledge. Technical education is a comparatively new phase of vocational education which is designed to meet the complex technological needs of modern industries. It should be noted that all technical education programmes are vocational but not all vocational education programmes are technical. This means that technical education is a sub-set of vocational education.

Technical and vocational education UNESCO & ILO (2002) is that form of education which begins with a broad base which facilitates horizontal and vertical articulation within the education system and between school and the world of work, thus contributing to the elimination of all forms of discrimination. It is also prepares the individual for lifelong learning of developing the necessary mental tools, technical and entrepreneurial skills and attitudes. Technical and vocational education develops in the individual capacities for decision making and the qualities necessary for active and intelligent participation, team work and leadership at work and in the community as a whole. It is needed for the industrial development of nation.

The rapid industrialization of any nation is tied to acquisition of vocational and technical education. Fundamentally, it is a systematic way of exposing individuals to the practical training of developing and producing goods and services for the citizens’ n any country. Nigeria as a developing country has failed to achieve any
meaningful industrial development because of a number of factors principal among which is overdependence on imported goods from the developed countries. The nation is endowed with abundant natural resources but lack the necessary vocational and technical knowledge to transform these resources into finished products. Therefore, acquisition of vocational and technical education is imperative to attaining industrial development, for it is a type of education that involves the application of the rudiments of science and technology for industrial design, production, distribution and services.

HISTORICAL OVERVIEW OF TECHNICAL AND VOCATIONAL EDUCATION IN NIGERIA

The Federal Republic of Nigeria (1981) defines technical education as that aspect of education which leads to the acquisition of practical and applied skills as well as basic scientific knowledge. One of the broad objectives of technical education to provide technical knowledge and vocational skills necessary for agricultural, industrial, commercial and economic development. Unfortunately, this aspect of education has experienced serious neglect right from the n-set of western education in Nigeria. This is due to the fact that this type of education enjoyed high priority in our traditional African education which its main aim is character training and job-orientation (Fafunwa, 1974). But with the coming of missionaries along with western education, technical education was accorded low priority as the emphasis then was completely on literary education. This assertion was corroborated by Ozoro (1982), who commented that is has been recognized for a long time that the largely literary curriculum in the Nigerian secondary school system does not prepare the soil to germinate and nurture science and technology.

The earlier missionary schools in the 19th century introduced farming, bricklaying and carpentry but were not regarded parts of western education and later collapsed before the turn of the last century with few exceptions like Blaize Memorial Industrial Institute in Abeokuta and Hope Waddell Institute, Calabar. According to Fafunwa (1974), the period between 1908-1935 witnessed the establishment of courses in various departments for instance, railway, marine, public works. This marked the beginning of organized technical education in Nigeria. This was followed by the introduction of higher engineering courses as Yaba College of technology in 1932. However, only few could benefit from these courses due to their nature and requirements.

In 1945, the first technical institute for Nigeria was established at Yaba replacing the Yaba High College. And seven years after in 1952, three colleges of arts, science and technology were established in Zaria, Ibadan and Enugu. These colleges recorded poor enrollment figures because of the general belief then that technical education is inferior to other types of education. More so, out of these three institutes only the one at Ibadan offered courses in the area of agriculture. In 1962, these colleges were closed down and their assets taken over by the first generation universities of Ife, Zaria and Nsukka. After, little effort was made to encourage technical education in the country. For example, in the northern region, there were only three trade centers located at Kaduna, Bukuru and Kano. In the 1970s more universities, polytechnics, and other colleges of higher learning were established but most of them were not technically oriented as most of them offer courses in languages, liberal arts and social sciences.

The period 1980-1983, saw the establishment of specialized technical institutions, that is, Federal Universities of Technology which were established to cater for manpower training in science and technology related areas but these universities were underfunded with inadequate facilities, this led to the merger of these universities with bigger ones by the Buhari/Iddigbon regime in 1984. Although these universities got their status restored 1988-1991 only little progress was recorded in the area of technology. Also, within the same period two of the universities were renamed universities of agriculture (Makurdi and Abeokuta) and later another one was established at Umudike, Umuahia. From the 1990s to date, there was remarkable expansion of various technical institutions in the country in terms of infrastructure, enrollment figures, course content and increase in the number of technical colleges, monotechnics, polytechnics and universities of technology. Also records have shown that there is significant expansion in the various faculties of engineering and technology in other conventional universities. There is also the introduction of information communication technology (ICT) in the school system. Recently three polytechnics namely; Kaduna polytechnic, the Ppolytechnic Ibadan and Yaba College of technology have been upgraded to degree awarding institutions. What is required is for the government to fund and equip these institutions in order to meet their set goals and objectives; otherwise Nigeria shall continue to trail behind in this era of technological advancement.
TECHNICAL AND VOCATIONAL EDUCATION AND INDUSTRIAL PRODUCTIVITY

Okorie, (2001) stated that some of the features of technical and vocational education include:

- Providing skills, knowledge and attitudes to prepare individuals for employment in occupations or career for national development.
- Helping young people to develop occupational competencies for industrial work.
- Aiding or making individuals to uphold the dignity of labour and right attitudes to real work situation.
- Inculcating through innovative methods and techniques necessary skills for employment in the formal and informal sectors of the economy.

It is on record that most industrialized countries of the world like USA, Germany, Japan and Britain have developed through huge investment in technical and vocational education. The attainment of an industrialized nation requires to a very large extent the training of the youths in various trades and professions which include air conditioning, automotive services, aircraft maintenance, construction and maintenance trades, carpentry, electrical/electronics, fabric maintenance service, industrial atomic energy, maritime occupations, energy, metal works, metallurgy, electric power-generating plant maintenance, textile production and fabrication, leather works etc. technical and vocational education is a type of education designed to develop skills in individuals to live, learn and work as productive citizens in the society (Okoro, 2006).

Industrial productivity is a measure of the efficiency which involves the conversion of productive resources into commodities or products. Higher productivity is a parameter for assessing living conditions and national development. This is to say that the technological progress of any nation depends on the level of resourcefulness of her citizens which in-turn is a reflection of the quality of education. This is corroborated by Agbionu, (1994), who opined that training and skill acquisition provide an efficient workforce in the business, agriculture and industrial sectors.

THE ROLE OF TECHNICAL VOCATIONAL EDUCATION IN INDUSTRIAL DEVELOPMENT

Nations of the world are confronted with the challenges to improve the capacities of their workforce to respond to their own national development needs and to the demands of a rapidly changing more globally competitive world. The future success of nations, but also of individuals, enterprises and communities depends on existence and possession of transferable and renewable skills and knowledge. Many, both in the developed and developing world, recognize the vital role that technical vocational education and training plays in equipping individuals with relevant skills and knowledge in social, economic and technological innovation process.

TVET was regarded as a core carpenter of national development strategy in the international community prior to the 1980’s but gradually was neglected due to high cost of funding and support. However, the 21st century’s need for new skills to match advances in information and communication technology has initiated the return of TVET to the international agency (Ani & Ani-Ofoegbu, 2011). Technical and vocational education is now a driving force of technological change all over the world. Its role in harnessing resources for industrial growth and development cannot be over emphasized.

There is no aspect of human activity today that has no technical orientation and complexity. Even religious worshipping today demands high technology as seen in the modern designs and construction of churches and mosques. The role of technical vocational education is also seen in producing graduates in design, construction and operation of industries; including oil, agriculture, forestry, petro-chemicals, mineral and water resources, electrical power generation and distribution, textile, iron and steel, automotive and plastics as well as in health technology, environmental designs, armaments and commercial enterprises are evidences of the invaluable roles of technical and vocational education in national industrial development (Aliyu & Dabban, 2009). Furthermore, Bulus (2010) noted that Nigeria realized the need for technical education as a key instrument for the development of its industrial potentials, hence the introduction of the 6-3-3-4 system of education in the 1980s, which placed more emphasis on science and technology. Similarly, Fadina (1991) stressed that for individuals to contribute meaningfully to economic development; they have to be trained and retrained for better performance. This form of training is better provided through technical and vocational education.
Industry has to do with people and activities involved in producing goods and services to meet the needs of the society. Lepsy as cited in Saleh, Dauda, and Muhammad (2012) pointed out that some factors that would promote industrial growth are:

- imparting sound education
- Making of productive citizens
- Investing in human resource development
- Entrepreneurship training
- Relevant skill acquisition

The objective of education, training and development is to provide for the trainees the knowledge, attitudes and skills needed for productive and gainful contribution to the process of development. To make the acquisition of high industrial skills possible, an appropriate learning environment is needed. In this context an appropriate high industrial skill development environment is one which provides adequate facilities for technology education and skills acquisition.

**BENEFITS OF TECHNICAL AND VOCATIONAL EDUCATION TO MANPOWER AND INDUSTRIAL DEVELOPMENT**

The prevailing global trend requires the training of individuals for better performance. Mills (1980) commented that in this technological age, training is essential for proper industrial development at all levels. A highly trained vocational and technical educator will be capable of imparting knowledge and training to unskilled youths to be absorbed in the industries. In the light of the above assertion, Okoro (1999) stated that vocational and technical education is a form of education whose primary objective is to prepare individuals for employment in recognized vocation or occupation. In the same vein, Okorie (2001) said that technical and vocational education has prior purpose of providing skills, knowledge and attitudes to prepare individuals for employment in recognized occupations or career for nation building.

The best form of human empowerment is by ensuring that each citizen is educated and trained in technical and vocational skills to be able to produce goods and services for national development. Stressing the benefit of Technical Vocational Education, UNESCO & ILO (2002) posit that education and skills formulation lead to less unemployment and more equity in employment. The economy and society at large like individuals and enterprises benefit as well. The economy becomes more productive, innovative and competitive through the existence of more skilled human potentials. Haruna (2008) opined that the benefits of vocational and technical education lies in its job-creation role in the economy, some of these benefits are:

- Technical and vocational education prepares the individual to acquire skills for gainful employment.
- It enables individuals to be self reliant through the setting up of small and medium scale enterprises (SMES)
- It is a specialized education model for human resource development which is a pre-requisite for national industrial development.
- It helps improve and maintain the standard of managerial and technical performance in industries and other organizations.
- It acts as a platform for ensuring sustained supply of qualified manpower to meet future needs of organizations at all levels.
- It propels employees to high standard of proficiency in their vocation overtime.
- It helps to raise the profitability and productivity of an enterprise through the effective use of highly trained manpower.

**CHALLENGES OF TECHNICAL AND VOCATIONAL EDUCATION IN NIGERIA**

Most people all over the world are quite aware of the power of technology both as a body of knowledge and as a way of life. Numerous challenges have been identified as set backs to the development of technical and vocational education in the country. Paramount of these is fund, power supply, and technical personnel among
others. Ejike (1990) pointed out that the inability of Nigerian government to adequately finance technology and technology education is a serious impediment to national growth and development. Lip services are paid to the funding of technical and vocational education. The governments fail to allocate reasonable amount to this form of education in their yearly budgets. Power is critical to the country’s industrial development but the state of power in Nigeria is better imagined that described. As Adebayo (2008) puts it, that “the country was ranked 158th out of 177 countries on the human development, index survey by the united nations development programme (UNDP), 2007/2008. This low ranking is because of poor provision of to its citizens.”

The power holding company of Nigeria (PHCN) has been identified as a “huge dragon that cannot spite fire” hence painting a glimpse picture towards the realization of the transformation agenda. A contemporary problem of technical and vocational education in Nigeria is the poor status of both the provider and the reliever. Emphasis is on developing manpower forgetting that there must be a well trained and well motivated manpower to create and develop the needed manpower. Nwosu (1992) lamented that though technical colleges have been established by both federal and state governments, vocational training centers’ built by governments, individuals and organizations, polytechnics and similar institutions established in all states, yet there is acute shortage of technical teacher.

This is because there are no commensurate incentives to attract and retain technical teachers. Similarly, Olaitan (1996) noted that the low level of effectiveness of technical and vocational education in Nigeria are due to lack of coordination of the programmes, inadequate facilities for learning, programmes are not quite job-oriented, teachers are poorly remunerated or motivated. This resulted in the situation where most of the graduates of vocational and technical institutions in the country lack the desired technical skills for employment in industries and other organizations. More so, skills acquired in schools quickly become obsolete in the labour market and the curriculum of technical education take a longer time to be reviewed in line with the fast technology for national development. If the socio-economic status of the technical teacher does not compare favourably with, if not exceed those of other professions, then the teacher cannot confidently carry out research, invent and innovate ideas or give the best of what he has to the learners.

STRATEGIES FOR ENHANCING INDUSTRIAL DEVELOPMENT THROUGH TECHNICAL AND VOCATIONAL EDUCATION

For technical and vocational education to move forward, the following strategies should be employed:

1. Review of curriculum: the content of technical and vocational education needs of the society.
2. Provision of well equipped workshops/laboratories: properly equipped workshops/laboratories should be provided in all schools at all levels to ensure proper teaching and learning of technical/vocational subjects and skills acquisition.
3. Proper funding: adequate budgetary provision should be made to the technical education sub-section for adequate procurement of teaching and training materials and provision of infrastructure for the success of the transformation agenda.
4. Provision of properly equipped libraries: a library is an indispensable storehouse of knowledge and an important facility in the school that enhances the teaching and learning process, therefore, the government should build and equip all libraries in Nigerian schools and colleges so that teachers and students an have access to relevant up-to-date information.
5. Training and retraining: staff development programmes should be encouraged in all schools in the country. On-the-job training and retraining inform of in-service training should be given to teachers, technologies, instructors and other support staff in order to improve their capacities for proper teaching and training of the youths for national development, for it is said that a well trained trainer trains better.
6. Improved working conditions: the remuneration of technical teacher in terms of salaries, wages and other conditions of service should be improved to attract and retain technical teachers, technologist, engineers, instructors and other supportive staff.
7. There should be adequate provision and installation of information communication technology (ICT) facilities in all schools in the country at all levels to enhance quality.
CONCLUSION

The development of a nation depends on the amount of output it can procure per unit input. Nigeria’s inability to properly develop its human and material resources is manifest in low productivity as shown not only in high prices of industrial products in the domestic market but also in the lack of competitiveness in the international market. A mass of skilled labour force, will serve as catalyst for transforming the abundant natural resources into industrial products. Successful industrial development can be achieved through addressing the challenges of consumption patterns and reduction systems by adequate and provision of technical and vocational education as well as strengthening the apparatus for teaching and learning of science and technology courses all over the country.

RECOMMENDATION

In order to bring about the needed industrial growth and development which is a key component of the transformation agenda, through technical vocational education and training the following recommendations are made:

1. Government should ensure that to reduce the high rate of unemployment among Nigerian youths, technical vocational education and training is integrated properly without further delay into the general education system with the provision of the needed infrastructure and personnel.
2. Guidance and counseling services should be provided and strengthened in all schools in the country so that students will be made to see the value of technical and vocational education as a catalyst to the success of the national transformation agenda.
3. There should be a nationwide campaign to enlighten the people and redirect the nation’s focus on science and technology education in order to propel the country into economic recovery through industrial development.
4. There should be strong political will on the part of our leaders to judiciously implement all policies, programmes and projects concerning the development of technical and vocational education.
5. Qualified technical teachers who are ICT complaint should be recruited all over the country to teach technology related courses.
6. There should be an exchange of technical/vocational teachers between states in the federation that is between “educationally disadvantaged” and educationally advantaged” states for crises-crossing of technical knowledge and ideas.
7. Institutionalized partnerships should be encouraged between government, non-governmental organization, professional bodies, corporate bodies, entrepreneurs to vigorously pursue the national transformation agenda.

REFERENCES