
**TECHNICAL VOCATIONAL EDUCATION AND TRAINING (TVET)
AND ENTREPRENEURSHIP FOR SUSTAINABLE
INDUSTRIALIZATION**

ADAMU MAIDALLAH ABDULLAHI

*Department of Electrical and Electronic Technology,
Federal College of Education (Technical), Bichi,
Kano State.*

Abstract

Technical and Vocational Education and Training (TVET) is regarded generally as the key input to industrialization, because modern industries require highly skilled technical personnel to ensure production. In recent years, entrepreneurship education was introduced to technical and vocational education programme aimed at developing enterprising attributes and attitudes that prepare the individual for self employment. The paper discusses entrepreneurship education in technical and vocational education programme that will inspire industrial development. concepts of technical and vocational education and training; entrepreneurship education, enterprise and Entrepreneur and entrepreneurship education for sustainable Industrialization. Lastly, it concluded that to achieve industrial sustainability micro, small and medium enterprises are the pillars to industrial development and recommended that technical and vocational education pedagogy and facilities must be improved to deliver quality TVET necessary to prepare youth properly for the entrepreneurial education experience.

Keywords: Technical and Vocational Education and Training; entrepreneurship education; sustainable Industrialization.

Technical and Vocational Education and Training (TVET) is considered universally as the key input to industrialization, because modern industries require highly skilled technical personnel's to ensure production. It is also a way of realizing

speedy economic growth and also an important means of providing employment opportunities. Training professionals in this type of education will enhance the opportunities of the country to become an industrial giant, because the skilled personnel are required for full industrial take-up and those that have entrepreneurial skills could go into setting of private industrial firms. Now that there is need to create more employment through establishment of private firms, entrepreneurship education is a vital tool for functional and practical TVET programmes. Ojeifo (2013) stated that the need for entrepreneurship education started to rear its head in the country because of political instability and also because of the inconsistencies in the social-economic policies of successive governments which in part led to the un-abating unemployment situation in the country today. Entrepreneurship education in Nigeria therefore amongst other things seek out to provide students in institutions with the knowledge, skills and motivation to encourage entrepreneurial success in a variety of ventures, distinctions of entrepreneurship education are offered at all levels of schooling in Nigeria, from primary to secondary schools through the tertiary education programs. It is a life- long learning process. The concept of lifelong learning is essential to the competitiveness of the knowledge economy. It applies to all levels of education and training and concerns all stages of life as well as the different forms of apprenticeship. In recent years, entrepreneurship education was introduced to technical and vocational education programme aimed at developing enterprising attributes and attitudes that prepare the individual for self employment. This paper will discuss entrepreneurship education in technical and vocational education programme that will inspire industrial development.

Concept of Technical and Vocational Education and Training

Vocational and Technical education is a comprehensive term referring to the education process when it involves, in addition to general education, the study of technologies and related sciences and the acquisition of practical skills and knowledge relating to occupations in various sectors of economic and social life. The broad educational goals of vocational and technical education distinguish it from vocational training which is directed to developing the particular skills and related knowledge required by a specific occupation or group of occupations.

Olaitan (1996) defined Technical Education as the brand of education designed to develop practical skills, abilities, understanding, attitudes, work habits, appreciation encompassing knowledge and information needed by workers to enter and make progress in a vocation in a useful and productive basis.

Technical Education is the training in technical subjects or areas of vocation to acquire both theoretical and practical knowledge as well as skills in preparation for gainful employment (Osuala, 1999).

Technical Education may be defined in terms of the training given in order to advance an individual's general proficiency especially in relation to his present or

future occupations. It is also seen as systematic learning experiences, which are designed to prepare individual for gainful employment (Okorie, 2001).

The National Policy on Education (2004) defined, Technical Education is used as a comprehensive term referring to those aspects of the educational process involving the acquisition of practical skills, attitudes, understanding and knowledge relating to occupation in various sectors of economic and social life. Technical and Vocational education is further understood to be:

- (a) an integral part of general education
- (b) a means of preparing for occupation fields and for effective participation in the world of work;
- (c) an aspect of lifelong learning and a preparation for responsible citizenship;
- (d) an instrument for promoting environmentally sound sustainable development;
- (e) a method of alleviating poverty.

Concept of Entrepreneurship Education, Enterprise and Entrepreneur

Entrepreneurship education has been fully integrated in the curriculum of vocational and technical education in tertiary institutions. Entrepreneurial courses are now contained in the NCE (technical) programme. Students offer the courses in levels two and three and pre-requisite for examination is that student must carry out project work, where the student is expected to conduct feasibility studies before the project is carried out.

According to Ojeifo (2013) Entrepreneurship education, therefore amongst other things provide students in tertiary institutions with the knowledge, skills and motivation to encourage entrepreneurial success in a variety of business enterprise. Entrepreneurship education presented at all levels of schooling in Nigeria, from primary to secondary schools through the tertiary education programs. It is a life- long learning process. The concept of lifelong learning is essential to the competitiveness of the knowledge economy. It applies to all levels of education and training and concerns all stages of life as well as the different forms of apprenticeship (Utulu, 2012).

Enterprise: Gibb and Nelson (1996) asserted that enterprise focuses on advancement of personal enterprising attributes and attitudes that prepare the individual for self employment.

Entrepreneur: The entrepreneur as a person brings in overall change through innovation for the greatest social good. Human values remain revered and motivate him to serve the society. He has solid belief in social betterment and he carries out this responsibility with conviction. In this process, he hastens personal, economic as well as human development. The entrepreneur is a futurist and an integrated man with outstanding leadership qualities. He always works for the well-being of the society.

More importantly, entrepreneurial activities encompass all fields/ sectors and foster a spirit of enterprise for the welfare of mankind (Okezie, Alex and Asolukan, 2013).

Objectives of Entrepreneurship Education

Entrepreneurship education is shaped towards different ways of realizing opportunities. Entrepreneurship education is distinctive, its focus is on realization of opportunity. Entrepreneurship education look for ways to provide students with the knowledge, skills and motivation to encourage entrepreneurship success in a variety of settings. Entrepreneurship education according to Paul (2005); Ojeifo (2013) as in Ayatse (2013) is structured to achieve the following objectives.

1. To offer functional education for the youth that will enable them to be self-employed and self-oriented.
2. Provide the youth graduates with adequate training that will enable them to be creative and innovative in identifying novel business opportunities.
3. To serve as a catalyst for economic growth and development.
4. Offer tertiary institution graduates with adequate training in risk management, to make certain bearing feasible.
5. To reduce high rate of poverty.
6. Create employment generation.
7. Reduction in rural – urban migration.
8. Provide the young graduates with enough training and support that will enable them to establish a career in small and medium sized businesses.
9. To inculcate the spirit of perseverance in the youths and adults which will enable them to persist in any business venture they embark on.
10. Create smooth transition from traditional to a modern industrial economy.

Entrepreneurship Education in Technical Vocational Education and Training

According to Charney & Libecap (2000) and Sinha (1996) Entrepreneurs with business and technical education background are in a better position in terms of success rate than entrepreneurs who do not have any technical background and entrepreneurship education. TVET is by design intended to develop occupational competencies that can be used in specific occupation or job. While Zhang, (2014) pointed out that TVET with Integrated Entrepreneurship Education (IEE) can significantly increase entrepreneurial intention (EI) to start-up a business. Entrepreneurship education is particularly effective in TVET, because, as students prepare to enter the world of work self-employment can be a valuable option for them. Considering the potential significant effect of entrepreneurship education, it is included in the TVET curricula

in many countries in the world (European Union, 2009, p. 7).

Competencies of individual's entrepreneurial skill in TVET are designed to lead the beneficiaries' to self-employment, economic self-sufficiency, and employment

generation through short or long-term training. This has lead African countries including Nigeria to realize that training in TVET is necessary to alleviate poverty through skill acquisition (Maigida; Saba & Namkere, 2013). Entrepreneurship education has a positive impact on the production of entrepreneurs, whereby many graduates began to open their own businesses, which ultimately grew into strong companies. Studies have also shown that individuals with high entrepreneurial qualities will be active, flexible, able to adapt to a learning environment and able to see change as an opportunity (Chou & friends, 2010; Shartrand, Weilerstein, Besterfield-Sacre, & Olds, 2008).

Indeed, entrepreneurship education in TVET program will strengthen the product of such education to become originators of small and medium enterprises which is highly needed in this country to boost the economy of the nation.

Entrepreneurship Education for Sustainable Industrialization

The European Commission (1999) has defined Sustainable development as the development that meets the needs of the present without compromising the ability of the future generations to meet their own needs. Building on the scientific rationale that the management of natural resources should be consistent with the preservation of its reproductive capacity, this concept has been broadened to incorporate economic, social and environment concerns. Environmental protection, economic development and social development are thus the three pillars of sustainable development.

The concept of responsible entrepreneurship, put forward by the United Nations in European Commission (1999) as a recognition of the business role for the accomplishment of sustainable development, means that companies can manage their operations in such a way as to enhance economic growth and increase competitiveness whilst ensuring environmental protection and promoting social responsibility. In facts, major improvements in environmental performance have already been made by industrial companies and business in general. In the past, such improvements were mainly a response to Government regulatory pressure using command and control type instruments and to economic incentives such as the level of relative prices. But increased public and business awareness of environmental challenges has contributed to companies' starting to take their part of the responsibility solving environmental problems and to integrate environmental concerns into their management strategies.

In china industrial sustainability have been achieved through the establishment of small and medium enterprises. Li (2012) reported that SMEs have contributed hugely to the creation of China's economic miracle. In particular, SMEs played an essential role in driving economic growth through investment in fixed assets, generating exports, and promoting technology assimilation. SMEs are estimated to contribute more than 60 per cent of China's GDP. Furthermore, the SME sector contributes to China's economic miracle by serving as an engine of job creation. The SME sector is a large provider of employment in China, especially new jobs. Currently,

SMEs account for around 80 percent of China's manufacturing employment and are estimated to create 80 per cent of new urban employment. More importantly, SMEs employ more low-income workers and socially vulnerable groups and sometimes are the only source of employment in poorer regions. The opportunity to work at SMEs also provides disadvantaged groups with access to knowledge which comes from working with other people, potentially generating positive externalities for improving human capital.

Industrial sustainability in India is attained through the Micro Small Medium Enterprises (MSME) this sector plays a significant role in the Indian economy. A catalyst for socio-economic transformation of the country, the sector is critical in meeting the national objectives of generating employment, reducing poverty, and discouraging rural-urban migration. These enterprises help to build a thriving entrepreneurial eco-system, in addition to promoting the use of indigenous technologies. The sector has exhibited consistent growth over the last few years, but it has done so in a constrained environment often resulting in inefficient resource utilization. The many challenges impeding the growth and development of MSMEs, inadequate access to financial resources is one of the key bottlenecks that make these enterprises vulnerable, particularly in periods of economic downturn (International Finance Corporation, 2012).

In Nigeria, the change from general education to specifically entrepreneurship education in technical and vocational education is very important in our educational system, because this type of education will empower the youth with the re- requisite skills required that is needed in processing and manufacturing industries and also the inclusion of entrepreneurship education will avail the youths entrepreneurship skills, which is vital in the establishment of micro, small and medium enterprises. As it seen the case with China and India micro, small and medium enterprises are factors that ensured sustainable industrial development.

Conclusion

Now that entrepreneurial education has been introduced to our educational system, authorities must support the proper implementation in sectors of the education system. To support it required that there have to be qualified teachers, teaching/learning facilities and proper monitoring of its implementation. While on the part of government to ensure that sustainable industrial development is achieved, it must provide economic, social and environmental dimensions required to ensure take -up of micro, small and medium enterprises. Providing economic institutions that could provide loans for youths wanting to set up business. It should creates productive employment where youths are fully engaged and lastly, the government should ensure that the environment is protected against the future.

Recommendation

This paper recommend the following to achieve sustainable industrial development in Nigeria:

1. Technical and Vocational Education pedagogy and facilities must be improved to deliver quality TVET necessary to prepare youth properly for the entrepreneurial education experience.
2. Loans/facilities should be made accessible to graduates of TVET to start up business of their own through micro-finance banks in their most immediate community.
3. Government should speed-up establishment of entrepreneurial development centers in all tertiary institutions across the country, this can come through providing special intervention for such purpose.
4. Technical and Vocational educators should develop in skills of carrying out feasibility studies on the part of their students, this will make them better initiators of businesses .
5. Parents and guardian should endeavor to bear with their wards financially and otherwise while on- training and after training.

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