Vocational and Technical Education: Seeing Through the Eye-View of Globalization

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Abstract

This paper seeks to define the concepts of vocational and technical education through the eye-view of globalization. Globalization as a concept has different shades of meaning as varied as the authors or writers posit. On one continuum globalization is portrayed as the process of increasing inter connectivity between societies such that events in one part of the world more and more have effects on peoples and societies far away. On the other continuum, globalization is equated with internationalization whereby cross-border relations between countries are described. Other shades of meaning used to describe globalization include: liberalization, universalization, westernization or modernization and deterritorialization. Having ex-rayed the concept of globalization, the paper seeks to examine vocational and technical education globally as it relates to other countries of the world. The concepts of vocational and technical education modus operadi in various countries of the world and their comparative standards were delved into. Concluding remarks stated that vocational and technical education whether in Hong Kong, Sweden or United States of America principally deals with the acquisition of skills. The paper recommends that the concept of globalization should be used to view each country's understanding of vocational and technical education, hence, eliminating conceptual barriers.

Keywords: *Vocational, technical, globalization*

Introduction

This paper seeks to define the concepts of vocational and technical education through the ambit of globalization. One of the phenomena identified as the major dynamics of change in the 21st century is globalization. Baylis and Smith (1997) identified globalization as the process of increasing inter connectivity between societies such that events in one part of the world more and more have effects on peoples and societies far away. Thus a globalized world is one in which political, economic, social, educational and cultural events become more and more interconnected and also one in which the impacts of these events in one society affect extensively the lives of people in other societies. Hence, the objective of this paper is to precisely state the concepts of vocational and technical education as they relate to various countries of the world.

Furthermore, Scholte (2000) as cited by Popoola and Oni (2005) established five distinct definitions of globalization that are in common usage. Though the definitions overlap and are related, the elements they highlight are significantly different. In the first instance, globalization is equated with internationalization. In this context, globalization is viewed simply as an adjective to describe cross-border relations between countries. It describes the growth in international exchange and interdependence. Therefore, with growing flows of trade and capital investment, there is the possibility of moving beyond an international economy (where the principle entities are national

economies) to a stronger version – the globalized economy in which district national economies are subsumed and re-articulated into the system by international process and transactions.

In the second set of definitions identified by Scholte (2000) and cited by Popoola and Oni (2005), globalization is observed as liberalization. In this direction, globalization refers to "a process of moving government – imposed restrictions on movements between countries in order to create an "open", "border less" world economy. Those who have argued with some success for the abolition of regulatory trade barriers and capital controls have sometimes clothed this in the mantle of "globalization".

The third set of definitions considers globalization as universaliztion. In this link, the word "global" is used in the sense of being "worldwide" and globalization is seen as the process of spreading various objects and experiences to people at all corners of the earth. A classic example of this would be the spread of computing, television and so on.

The fourth concept of globalization depicts the term with westernization or modernization. In this regard, globalization is understood as a dynamic, whereby the social structures of modernity (Capitalism, rationalism, industrialism, bureaucratism etc) are spread the world over, normally destroying pre-existent cultures and local self determination in the process.

Scholte's fifth concept of globalization as discussed in Popoola et al equates the term as deterritorialization. In this direction, globalization entails a reconfiguration of geography so that social space is no longer wholly mapped in terms of territorial places, territorial distances and territorial borders. Of the five definitions of globalization, Scholte argued that it is only the conception of globalization as deterritorialization that offers the possibility of a clear and specific concept of the term. The notion of supra territoriality (or trans-world or trans-border relations), the author proclaimed, provides a way of appreciating what is global about globalization.

From the foregoing, a general concept of globalization can be stated as the intensification of worldwide relations linking one part of the globe with other parts in ways that what happens in one place is relayed by events occurring in other distant places (Okrah, 2004). In this sense, globalization is seen as the complex interconnectedness of peoples' present and future – a phenomenon which is becoming the dominant character of the world's political, cultural, economic and natural environments (Khan, 2003). Having explained the concept of globalization, we can now proceed to define vocational and technical education.

The Concept of Vocational Education

Vocational education deals with the training or retraining designed to prepare individuals to enter into a paid employment in any reorganized occupation (Okoro, 1993). The Nigerian National Policy on education defines vocational education as a comprehensive term referring to those aspects of the educational process involving, in addition to general education, the study of technologies and related sciences and the acquisition of practical skills, attitudes, understanding and knowledge relating to occupations in various sectors of economic and social life.Vocational education or vocational education and training (VET) is an education that prepares trainees for jobs at various levels from a craft or trade to a professional position in engineering, accounting, nursing, medicine and other health practitioners, architecture, pharmacy, law etc. Craft vocations are usually based on manual or practical activities, traditionally non-academic and totally related to a specific trade, occupation or vocation.

Vocational education may be classified as teaching procedural knowledge. This can be contrasted with declarative knowledge as used in education in a usually broader scientific field, which might concentrate on theory and abstract conceptual knowledge, characteristic of tertiary

education. Vocational education can be at the secondary, post secondary level, further education level and can interact with the apprenticeship system. Increasingly, vocational education can be recognized in terms of recognition of prior learning and partial academic credit towards tertiary education (e.g. at a university) as credit; however, it is rarely considered in its own form to fall under the traditional definition of higher education (http://www.oecd.org/dataoecd).

Vocational education is related to the age-old apprenticeship system of learning. Apprenticeships are designed for many levels of work from manual trades to high knowledge work. Interestingly, as the labour market becomes more specialized and economies demand higher levels of skills, governments and businesses are increasingly investing in the future of vocational education through publicly funded training organizations and subsidized apprenticeship or traineeship initiatives for businesses. At the post-secondary level vocational education is typically provided by an institute of technology or by a local community college. However, vocational education has diversified over the 20th century and now exists in industries such as retail tourism, information technology, funeral services and cosmetics as well as in the traditional crafts and cottage industries (http://en.wikipedia.org/wiki/vocateduc)

The Concept of Technical Education

Technical education is that aspect of education that gives its recipients an opportunity to acquire practical skills as well as some basic scientific knowledge (Nigerian National Policy on education, 1981). Puding (1994) defined technical education as that type of education which fits the individual for gainful employment in recognized occupations as semi-skilled workers or technicians or sub-professionals.

In his own views, Uwaifo (2009) posited that technical education is the training of technical – oriented personnel who are to be the initiators, facilitators and implementers of technological development of a nation. He opined that this training of its citizenry on the need to be technologically literate, would lead to self-reliance and sustainability. He stressed that technical education more than any other profession has direct impact on national welfare.

Furthermore, technical education contributions are widespread and visible ranging from metal work technology, mechanical/automobile technology, electrical and electronic technology, building and woodwork technology etc. Consequently, technical education can serve as change agents not only for technical systems but also for many other societal changes. The practical nature of technical education makes it unique in content and approach thereby requiring special care and attention. The inputs of technical education are so visible to the extent that even an illiterate could see when failures occur.

Having critically examined the concepts of vocational and technical education, we proceed to see them through the eye-view of globalization. In this ambit, vocational and technical education are discussed under the umbrella of vocational education and training (VET). They are discussed under the following categories:

- Vocational education and training in Australia
- Vocational education and training in Common Wealth of Independent States
- Vocational education and training in Finland
- Vocational education and training in German Language Areas
- Vocational education and training in Hong Kong, Hungary and India
- Vocational education and training in Japan and Korea
- Vocational education and training in Mexico and New Zealand
- Vocational education and training in Norway, Paraguay and Sweden

- Vocational education and training in Switzerland
- Vocational education and training in the United Kingdom
- Vocational Education and Training in the United States of America

They are vividly described below:

Vocational Education and Training (VET) in Australia

In Australia vocational education and training is mostly post-secondary and provided through the vocational education and training (VET) system by registered training organizations. This system encompasses both public, TAFE and private providers in a national training framework consisting of the Australian Quality Training framework (http://www.training.com.cus 2007). Australian Qualifications Framework and Industry Training Packages (http://www.dest.gov.au/sectors/ trainingskills/policy), which define the assessment standards for the different vocational qualifications.

Australia's apprenticeship system includes both traditional apprenticeships in traditional trades and "traineeship" in other more service – oriented occupations. Both involve a legal contract between the employer and the apprentice and provide a combination of school – based and workplace training. Apprenticeships typically last three to four years, traineeships only one or two years. Apprentices and trainees receive a wage which increases as they progress (http://www.oecd.org/dataoecd/ 27/11/4/63/38). In Australia, the National Centre for Vocational Education Research NCVER (http://www.never.edu.au) is a not-for-profit company owned by the federal, state and territory ministers responsible for training. It is responsible for collecting, managing, analyzing, evaluating and communicating research and statistics about vocational education and training (VET). In Australia, the boundaries between vocational education and tertiary education are becoming more blurred. A number of vocational training providers such as NMIT, BHT and WAI are now offering specialized Bachelor degrees in specific areas not being adequately provided by universities. Such applied courses include Winemaking and viticulture, aquaculture, information technology, music etc.

Vocational Education and Training in Commonwealth of Independent States

The largest and the most unified system of vocational education was created in the soviet union with the professional no-technich-eskoye Uchilische and Technikum. But it became less effective with the transition of the economies of post-soviet countries to a market economy.

Vocational Education and Training in Finland

In Finland vocational education belongs to secondary education. After the nine-year comprehensive school almost all students choose to go to either a Lukio (high school) which is an institution preparing students for tertiary education or to a vocational school. Both forms of secondary education last three years and give a formal qualification to enter university. In certain fields (e.g. the police school, air traffic control personnel training), the entrance requirements of vocational schools include completion of the Lukio thus causing the students to complete their secondary education twice.

Furthermore, in Finland, the education in vocational school is free and the students from low-income families are eligible for a state student grant. The curriculum is primarily vocational and the academic part of the curriculum adapted to the needs of a given course. The vocational schools are

mostly maintained by municipalities. After completing secondary education, one can enter higher vocational schools or universities. It is also possible for a student to choose both lukio and vocational schooling. The education in such cases last usually from 3 to 4 years.

Vocational Education and Training in German Language Areas

Vocational education is an important part of the education systems in Austria, Germany, Liechtenstein and Switzerland (including the French and the Italian speaking parts of the country) and one element of the German model.

For example, in Germany a law was passed in 1969 which regulated and unified the vocational training system and codified the shared responsibility of the state, the unions, associations and chambers of trade and industry. The system is very popular in modern Germany in 2001, two thirds of young people aged under 22 began an apprenticeship and 78% of them completed it, meaning that approximately 51% of all young people under 22 have completed an apprenticeship. One in three companies offered apprenticeships in 2003; in 2004 the government signed a pledge with industrial unions that all companies except very small ones must take on apprentices. The vocational education systems in the other German speaking countries are very similar to the German system and a vocational qualification from one country is generally also recognized in the other states within this area.

Vocational Education and Training in Hong Kong, Hungary and India

In Hong Kong, vocational education is usually for post-secondary 3,5 and 7 students. The Hong Kong Institute of Vocational Education (IVE) provides training in nine different vocational fields, namely; Applied Science, Business Administration; Child Education and Community Services; Construction; Design: Printing, Textiles and clothing; Hotel, Service and Tourism studies; Information Technology; electrical and electronic engineering, and mechanical, manufacturing and industrial engineering.

In Hungary, at the end of elementary school (at age 14) students are directed to one of three types of upper secondary education: one academic track (gymnasium) and two vocational tracks. Vocational secondary schools provide four years of general education and also prepare students for the maturate. These schools combine general education with some specific subjects referred to as pre-vocational education and career orientation. At that point many students enroll in a post-secondary VET programme often at the same institution, to obtain a vocational qualification although they may also seek entry to tertiary education. Demand for vocational training schools both from the labour market and among students has declined while it has increase for upper secondary schools delivering the maturata (http://www.oecd. org/dataoecd/24/27/41738329).

However, vocational training in India is provided on a full time as well as part time basis. Full time programs are generally offered through I.T.Is industrial training institutes. The nodal agency for granting the recognition to the I.T.Is is NCVT which is under the ministry of labour, Government of India. Part time programs are offered through state technical education boards or universities who also offer full time courses. Vocational training has been successful in India only in industrial training institutes and that too in engineering trades. There are many private institutes in India with courses in vocational training and finishing, but most of then have not been recognized by the Government. India is a pioneer in vocational training in Film and television and information technology.

Vocational education and training in Japan and Korea

Japanese vocational schools are known as Senmon gakko. They are part of Japan higher education system. They are two year schools that many students study at after finishing high school (although it is not always required that students graduate from high school). Some have a wide range of majors, others only a few majors. Some examples are computer technology, fashion and English.

However, in Korea, vocational high schools offer programmes in five fields; agriculture, technology/ engineering, commerce/ business maritime/ fishery and home economics. In principle, all students in the first year of high school (with grade) follow a common national curriculum. In the second and third years (11^{th} and 12^{th} grades) students are offered courses relevant to their specialization. In some programmes, students may participate in workplace training through cooperation between schools and local employers. The government is now piloting vocational master schools in which workplace training is an important part of the programme. Around half of all vocational high schools are private. Private and public schools operate according to similar rules, for example, they charge the same fees for high school education, with an exemption for poorer families (http://www.oecd.org.edu/learning for jobs).

Vocational education and training in Mexico and New Zealand

In Mexico, both federal and state governments are responsible for the administration of vocational education. Federal schools are funded by the federal budget in addition to their own funding sources. State centres for scientific and technological studies (CECYTE) and institutes of training for work (ICAT). These institutions are funded 50% from the federal budget and 50% from the state budget. The state governments also manage and fund "decentralized institutions of the federation), such as CONALEP schools. Compulsory education (including primary and lower secondary education) finishes at the age of 15 and about half of those aged 15 to 19 are enrolled full time or part time in education. All programmes at upper secondary level require the payment of a tuition fee.

The upper secondary vocational education system in Mexico includes over a dozen subsystems (administrative units within the upper secondary education). Vocational education and training provided under the upper secondary education include: training for work; technical professional – baccalaureate and the programme awarding the technological baccalaureate (htt://www.oecd.org/edu/learning for jobs).

However, New Zealand is served by 39 industry training organizations (ITO). The unique element is that ITOs purchase training as well as set standards and aggregate industry opinion about skills in the labour market. Industry training as organized by ITOs has expanded from apprenticeships to a more true life long learning situation with, for example, over 10% of trainees aged 50 or over. Moreover, much of the training is generic. This challenges the prevailing idea of vocational education and the standard layperson view that it focuses on apprenticeships. One source for information in New Zealand is the industry training federation (http://www.itf.org.nz). Another is the ministry of education (http://www.educationcounts.govt.nz). Polytechnics, private training establishments, Wanaga and others also deliver vocational training among other areas.

Vocational education and training in Norway, Paraguay and Sweden

Nearly all those leaving lower secondary schools enter upper secondary education and around half follow one of 9 vocational programmes. These programmes typically involve two years in school

followed by two years of apprenticeship in a company. The first year provides general education alongside introductory knowledge of the vocational area. During the second year courses become more trade specific.

In Norway, apprentices receive a wage negotiated in collective agreements ranging between 30% and 80% of the wage of a qualified worker, the percentage increasing over the apprenticeship to vocational technical colleges, while those who wish to enter university need to take a supplementary year of education. The National Council for vocational education and training advices the minister on the development of the national vocational education and training system. The advisory councils for vocational education and training are linked to the nine vocational education programmes provided in upper secondary education and advise on the content of VET programmes and on trends and future skill needs. (http://ww.oecd.or/dataoecd/45/34/41506628).

In Paraguay, vocational education is known as bachillerato Tecnico and is part of the secondary education system. These schools combine general education with some specific subjects, referred to as pre-vocational education and career orientation. After nine years of primary school, the student can choose to go to either a vocational school or a high school. Both forms of secondary education last three years and are usually located in the same campus. After completing secondary education, one can enter into the universities. It is also possible for a student to choose both Tecnico and Cientifico schooling.

In Sweden, nearly all of those leaving compulsory schooling immediately enter upper secondary schools and most complete their upper secondary education in three years. Upper secondary education is divided into 13 vocationally – oriented and 4 academic national programmes. Slightly more than half all students follow vocational programmes. All programmes offer broad general education and basic eligibility to continue studies at the post-secondary level. In addition there are local programmes specially designed to meet local needs and individual programmes.

In Sweden, a 1992 school reform extended vocational upper secondary programmes by one year aligning them with three years of general upper secondary education increasing their general education content, and making core subjects compulsory in all programmes. The core subjects (which occupy around one-third of total teaching time in both vocational and academic programmes) include English, artistic activities, physical education and health, mathematics, natural science, social studies. In addition to the core subjects, students' pursue optional courses, subjects which are specific to each programme and a special project. Vocational programmes include 15 weeks of workplace training over the three-year period. Schools are responsible for arranging workplace training and verifying its quality (http://www.oecd.org/edu/ learning for jobs).

Vocational education and training in Switzerland

Nearly two thirds of those entering upper secondary education enter the vocational education and training system. At this level, vocational education and training is mainly provided through the "dual system". Students spend some of their time in a vocational school; some of their time doing an apprenticeship at a host company and for most programmes, students attend industry courses at an industry training centre to develop complementary practical skills relating to the occupation at hand. Switzerland draws a distinction between vocational education and training (VET) programmes at upper secondary level and professional education and training (PET) programmes, which take place at tertiary B level. In 2007, more than half of the population aged 25-64 had a VET or PET qualification as their highest level of education. In addition, universities of applied sciences offer

vocational education at tertiary A level. Pathways enable people to shift from one part of the education system to another (http://www.org/dataoecd/12/5/4278682).

Vocational and education raining in the United Kingdom

The first trades' school in the UK was Stanley Technical Trades school (now Harris Academy South Norwood) which was designed built and set up by William Stanley. The initial idea was thought of in 1901, and the school opened in 1907 (Owen, 1912).

The system of vocational education in the UK initially developed independently of the state, with bodies such as the RSA and City and Guilds setting examinations for technical subjects. However, the Education Act 1944 made provision for a Tripartite system of grammar schools, secondary technical schools and secondary modern schools, but by 1975 only 0.5% of British senior pupils were in technical schools, compared to two-thirds of the equivalent German age group (Wolf, 2002).

Successive recent British Government have made attempts to promote and expand vocational education. In the 1970s, the Business and Technology Educaiton Council was founded to confer further and higher education awards, particularly to further education colleges in the United Kingdom. In the 1980s and 1990s, the conservative government promoted the Youth Training scheme, National vocational Qualifications and General National Vocational Qualifications. However, youth training was marginalized as the proportion of young people staying on in full-time education increased (Wolf, 2002).

In 1994, publicly funded modern Apprenticeships were introduced to provide "quality training on a work based (educational) route (http://www. keele.ac.uk/depts./so/youths chron/educat/9197 educ.htm). Numbers of apprentices have grown in recent years and the department for children, schools and families has stated its intention to male apprenticeships a 'mainstream' part of England's education system (DIUS/DCSF, 2008).

Vocational Education and Training in the United States of America

Vocational education and job training program has been an integral part of national development strategies in many societies because of the impact on human resources development, productivity and economic growth. The provision of vocational technical schools in America has a long history. Before the industrial revolution (between 1750 and 1830). The home and the "apprenticeship system" were the principal sources of vocational education. Societies were forced by the decline of handwork and specialization of occupational functions to develop institutions of vocational education.

However, vocational education became popular in the elementary schools in the United States of America after 1880 and developed into courses in industrial training, book keeping, stenography and allied commercial work in both public and private institutions. Some of the early private trade schools in the US include Cooper Union (1859) and Pratf Institute (1888), the Hampton Institute (1868) and Tuskegee Institute (1881). The agricultural high school (1888) of the university of Minnesota was the first regularly established public vocational secondary school that introduced extensive public instruction in agriculture.

The number of public and private vocational schools has greatly increased since 1900. There was an impetus on vocational education during world war II (1939-1945) when the armed services had great need for technicians that the civilian world could not supply. Further upsurge on vocational training was from the service men's Readjustment Act of 1944 (the G.I. Bill of Rights)

which allowed world war II veterans to receive tuition and subsistence during extended vocational training. In addition, there was the Manpower Development Training Act (1962), the Vocational Education Act (1963), the Vocational Education Amendment (1968). All these helped to improve the US workforce and ensure that vocational training is available for economically (and physically) challenged youths. Generally, the US appreciate skills acquired through vocational training.

Conclusion

Various concepts of globalization have been adduced in this paper by various authors and writers. The birds' eye-view of globalization has been utilized to ex-ray the concepts and state of the art concerning vocational education and technical education in various countries of the world. In this paper, vocational education and training has dimensional views as it relates to various countries of the world. It is however pertinent to adduce the fact that vocational education whether in Hong Kong, Sweden or America principally deals with the acquisition of skills. Hence, seeing vocational and technical education with the eye-view of globalization, the paper concludes that each country of the world has her own hierarchy of development and modus operandi.

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