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Biodun, Adedoyin O. *Comparative Analysis: Nigeria TVET and United States CTE System*

Abstract

The purpose of this Study was to identify what a highly developed and a lesser developed nation can learn from each other's TVET/CTE systems. The study aims to contribute to better understanding of both Nigeria's TVET and the United States CTE systems, to positively affect their effectiveness and to equate the United States (U.S.) with Nigeria. Select states were employed as a representative of the U.S. The literature review was employed in the process of selecting the states. The states of Wisconsin, Minnesota, Illinois, and Michigan were determined to represent the U.S. based on attributes inclusive of social, political, economic, geographic attributes that describe TVET/CTE systems as they apply to the U.S. and Nigeria.

Key findings indicate that Career and Technical Education in the United States and Vocational Education and Training in Nigeria share similarities and differences. Both struggle with drawing students into them. Both indicate the need and perceive funding challenges and in preparing for needed occupations. The U.S. and Nigerian systems are challenged with student access to the institutions from a geographic perspective. Finally, it becomes apparent that issues and opportunities in preparing individuals for the workforce differ based on the level of economic development the systems reside in.

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Chapter I: Introduction

Okolocha & Chimezie (2012) explained that career and technical education is the oldest form of education in the world. It was formerly known as vocational education, and it is an educational training for youths and adults to acquire knowledge, skills, competencies, structural activities, abilities and capabilities which are preparing the recipient to enter competitive employment in various sectors of the economy. Career and technical education have passed through several forms of transformation both in names and in practice over the years. Vocational education started informally within the family where fathers and mothers would teach their children how to get essential needs of life, and it was known as home apprenticeship system. In every society, it is a way which resulted in individuals working to meet their daily needs and cope with their physical environment. It was also preparing people for work and living. (Akpan, Usoro, & Ibritam, n.d.). From the general view of career and technical education, there will be a comparison of Nigerian and US Systems.

In Nigeria, CTE is called technical vocational education and training (TVET). Fafunwa (1974) explained that TVET had a varied history and started in in the pre-colonial era. During that time, TVET existed in traditional ways and is practiced on the apprenticeship system by learning various skills such as weaving, sculpturing, farming, carving, blacksmithing, leather work, and fishing. TVET in Nigeria has both formal and informal education and training process. The informal process is taught through apprenticeship while the formal process is taught through schools like technical colleges, and polytechnics. TVET in Nigeria is monitored by the National Business and Technical Examinations Board (NABTEB) which was established in 1992 to supervise craft level examinations in Nigeria. Nonetheless, TVET in Nigeria was not held in high regard because of a misconception that it was only for those unable to pursue a more

academic track. The misconception of TVET among Nigerians has resulted in a decline in the enrollment of TVET students.

The United Nations Educational, Scientific and Cultural Organization (2014) explained that CTE in the U.S. is experiencing a reawakening of interest because there is ongoing reform to upgrade the image of CTE. CTE in the U.S has developed principles that are making CTE work. These principles are:

- CTE is critical to ensuring that the United States leads in global competitiveness.
- CTE is a results-driven system that demonstrates a positive return on investment.
- CTE cooperates actively with employers to design and provide high-quality and dynamic programs.
- CTE prepares students to succeed in further education and careers.
- CTE is delivered through comprehensive programs of study aligned to the
- National Career Clusters Framework. (UNESCO, 2014).

Nigeria should be competing with the developed nations of the world technologically, but it is unfortunate that vocational education has been neglected by the government (Kennedy, 2012). Ojimba (2012) said that the neglect of TVET is “socially injurious as it robs the nation of contribution the graduates would make on national development” (p. 24). Nigeria TVET needs to recognize the relevance of technical and vocational education in national development because the society needs competent auto mechanics, truck drivers, carpenters, plumbers, electricians, computer database technicians, web/network technicians, medical technicians, and vocational nurses to function well because not everyone needs a university education (Ojimba, 2012). Moreover, this set of careers is very relevant for the labor force of the 21st-century economy because who would employ the graduates if everyone became a university graduate.

Presently, Nigeria is going through an economic recession which makes getting white collar jobs to be more difficult. Therefore, Nigeria needs to look at what the United States is doing to prepare his youths and students for a broad range of career in the twenty-first-century economy. TVET in Nigeria is facing so many challenges like poor funding, rapid technological growth that is hard to keep up with, underestimation of TVET teachers, lack of efficient educational monitoring and evaluation procedures, the image of TVET as the education of last resort. (UNESCO, 2012). Therefore, we need to look abroad and see how they are doing it.

Statement of the Problem

TVET, in Nigeria, has been ineffective for decades due to the way the government handles it, the misconception further challenges what Nigerians might know about technical schools (Ojimba, 2012). There is also evidence that Nigerians prefer apprenticeship for direct workforce entry and the university as the pathway to a profession. Furthermore, there is lack of research specific to Nigeria's TVET system.

Purpose of the Study

The purpose of this study is to identify what a highly developed (HDN) and a lesser developed (LDN) nation can learn from each other's TVET systems. This study can contribute to better understanding of both, Nigeria's TVET and the United States CTE systems, in order to positively affect their effectiveness.

Research Objectives

The study seeks to achieve three research objectives (RO).

1. Illustrate the context in which the Nigerian and the U.S. Midwestern States (Wisconsin, Minnesota, Illinois and Michigan) technical education and training systems exist.

2. Describe similarities and differences between the Nigerian and the U.S. Midwestern States of Wisconsin, Minnesota, Illinois and Michigan) technical education and training systems.
3. Identify opportunities and challenges confronting CTE/TVET within the U.S. and Nigeria.

Assumptions of the Study

The researcher believes that 1) career, technical, workforce education and training are valued within each of the respective geographic areas that are being compared (U.S. [represented by select Midwestern states] and Nigeria), and 2) that the regions represented within the study can draw upon the findings between CTE and TVET in a manner that helps each understand how the comparison can inform its system.

Definition of Terms

For this study, the following terms were defined:

Career and technical education (CTE). The Glossary of Education Reform defined CTE "as a term applied to schools, institutions, and educational programs that specialize in skilled trades, applied sciences, modern technologies, and career preparation. It was formerly (and is still commonly) called *vocational education*." (para. 1).

Technical vocational education and training (TVET). The United Nations Educational, Scientific and Cultural Organization (UNESCO) defined TVET as "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 occupation in various sectors of economic life." (para. 1).

Limitations of the Study

This study will make use of secondary sources of data collection from relevant textbooks, journals, and so forth. And this data might not be accurate. Also, Nigeria and the U.S. are big countries and to get a comprehensive report about vocational education will be very difficult.

Chapter II: Literature Review

This review of the literature based on the themes that differentiate vocational and technical education. The review begins with a historical context of Nigeria and the United States. Then the overview and history of technical and vocational education in Nigeria and the United States.

Historical Context

Fleming, 2018 defines historical context as the political, social, cultural, religious, and economic settings that existed during a particular time and place. It is an integral part of this comparative study because, without it, memories have less meaning. Also, it gives the details of the time and place in which situation occurs, and these details will enable the comparative analysis of this study by interpreting the events of the pasts, or the future rather than judging them by contemporary standards (Fleming, 2018).

Nigeria's historical overview. Like so many other African countries, Nigeria is the creation of British colonialism. The British influence and control started back in the 19th century. The name Nigeria was derived from the great Niger river which is the most dominating physical feature in the country then, and the name was suggested in the 1890s by British Journalist Flora show who later became the wife of colonial governor Fredrick Lugard. In 1960, Nigeria gained his independence from British government through a series of constitutions after World War II that granted Nigeria a greater autonomy.

After the independence, Nigeria experienced military coups and a cruel Civil War. As at then, Nigeria was ruled by the military who are ready to take over the economy because of the oil boom in Nigeria. The Civil War started because of the ethnic differences, and this led to the killings of Igbos in eastern Nigeria. Since 1960, Nigeria struggled through a series of the

military dictatorship that ended in 1999 with a peaceful transition to democratic government and adoption of the new constitution was completed. Since then Nigeria is experiencing a democratic rule government although with some irregularities and violence. Nigeria is one of the populated countries in the world, and it has a history that is important. However, Education has an important role to play in Nigeria, and before the arrival of the British in the early 19th century, there were two major types of education in Nigeria, and these are the Islamic and the indigenous system of education.

The Islamic system of education was strictly religious, and the Islamic schools were majorly in the Northern part of Nigeria because that is where most them are Muslims. The indigenous system of education was where practical skills are being taught to students to be successful in traditional society. The training is first done by teaching the children how to perform individual duties in their communities such as sweeping, clearing bushes, and so forth. Also, as the children grew older, they will be introduced to more specialized work where they will need to enter an apprenticeship with master artisans to learn crafts such as carving, farming, and so forth. Even in the 21st century, this kind of education is universal.

In the 1840s the formal western type of education was introduced by the British missionaries. In the mid-1800s, The Anglican Church Missionary Society (CMS) started several schools, and the colonial government supported them. In 1914, the British colonial government merged northern and southern regions into one colony, by the merging western education slowly entered the northern region. Nigeria adopted the British system of education called "form six" that divided grades into six elementary years, three junior secondary years, two senior secondary years, and a two-year university preparation program before entering the university in 1950.

After the independence, the Nigerian educational system was destroyed due to the Nigeria Civil War until 1970 when eastern Nigeria surrendered. In 1976, Nigeria passed a new law making education compulsory for all children between the ages of 6 and 12. Also, a new educational system was created and is known as 6-3-3-4 which means six years of elementary school, three years of junior secondary, three years of senior secondary and four years of university education. Nigeria's government began building primary and secondary schools in the early 20th century and took over the missionary schools. Now, private schools are taking over in Nigeria because the government does not well fund government schools, and it is deteriorating the Nigeria educational system.

United States history overview. The history of the United States is extensive. Between 1775 and 1783 there is an American war of independence that allowed the original 13 colonies to be independent of Great Britain. Thirty-seven new states were added to the original 13 between the 19th and 20th centuries, after this addition, the nation of America began to expand across the continent of North America and acquired more possessions. The American Civil war started in 1861 and ended in 1865.

The Civil War divided the United States into Northern and Southern States. After this war, United States became one whole nation and ended slavery. In 1929, the worst economic crisis occurred in the United States because of the stock market crash, and this led to the great depression. Since the end of the World Wars I, II, and Cold Wars in 1991, the United States has grown, and it has remained the dominant nation in the world. (World Factbook).

Economic Overview

The economy is the conditions of economic life in an area or a country, and it is used in this comparative study because it will help in knowing the state of Nigeria and the United States'

economy. It will also help the study to know the future of each country. The economy of a country is vital because it will help the country to know the way in which people produce, use and exchange goods and services. Also, the economy is what allows a country to survive and thrive.

Nigeria's economic profile. According to International Labor Organization (ILO) "Nigeria is the largest economy in Africa, with high economic potential due to the size of its domestic market as well as its human and natural resources." (para 1). From the World Factbook, Nigeria relies heavily on oil as its primary source of revenue and foreign exchange earnings. Due to the mismanagement of oil production by the government, Nigeria went into a global financial crisis between 2008 and 2009.

The global financial crisis led to the recapitalization of banks, and new regulations were adopted. Following the recapitalization, Nigeria economic growth has been driven by growth in Agriculture, telecommunications, and services. Despite the restructuring, 62% of Nigeria's 170million people still live in abject poverty. There is the inadequate power supply, unemployment, lack of suitable infrastructure, insecurity, corruption, and so forth. (World Factbook).

Between 2010 and 2014, Nigeria economy recorded average GDP growth of 5.7% per annum and the official unemployment for the working age population is 7.5%. The unemployment in Nigeria is because of jobless growth, a high number of graduates with no job opportunities, job losses in the manufacturing and oil sectors, and freeze in employment in many public and private companies, (ILO).

The present government is trying to diversify the economy away from oil, increase transparency and improve fiscal management. The government is also working to develop

stronger public partnerships for roads, agriculture, and power. In 2016, Nigeria entered a recession which makes the GDP growth to be -1.5%. (World Factbook). The International Monetary Fund (IMF) projected that in 2017 the GDP growth should be 0.8% which is a change from the 2016 GDP growth since the new government is trying to diversify from oil. Nigeria is rich in Agricultural products such as corn, palm oil, rice, yams, timber, cattle, rubber, cassava, and so forth. Paying more attention to develop agriculture might be a way to revive the economy of Nigeria.

United States' economic profile. According to the CIA World Factbook, The United States is regarded as the most technologically powerful economy in the world with a per capita GDP of \$57,300. Since the end of World War II, United States has built its economy, and its firm is at the forefront of technology especially in computers, medical, and pharmaceuticals, aerospace, and military equipment. The United States economy has been known as the largest in the world for more than a century until 2014 when it fell into the second position behind China which has more than tripled the United States growth rate for each year of the past 40 years in 2016. As compared to China, the GDP real growth rate in the United States is 1.6%, and it is projected to grow to 2.2% in 2017. The United States economy has some long-term problems which include lower-income families' wages being stagnated, inadequate energy, increase in medical and pension costs of an aging population, inadequate investment in dilapidating infrastructure, sizeable current account and budget deficits

In the United States, oil is imported, and it has a significant impact on the overall health of the economy. The significant economic boom in the United States is industries and several agricultural products, and these industries are motor vehicles, aerospace, steel, electronics, lumber, mining, chemical, telecommunication, petroleum, and food processing. The agricultural

products are corn, wheat, vegetables, poultry, forest products, dairy products, fish, pork, beef, cotton, and other grains. The economy of the United States is built mainly on high technology innovators that are why the United States government need more of highly skilled people in technology, and that is why career and technical education is promoted. (World Factbook).

Governance and Human Resource Development

The government policy set part of the context in which CTE/TVET drives a nation, state or community. Understanding government and the economic systems that it supports is critical to any comparative study. Through policy and legislation, governments protect its people (Human Resources) and allocate its economic resources. Therefore, it is the government that policy and laws concerning education. It determines the extent to which every child must go to school and to what levels of credentials. Through education, government drives human resource development that is consistent with the nation's vision of its citizens standard of living and the nation's place within the global economy.

Nigerian government. According to One World Nations Online, “Nigeria is a federal republic with a presidential system of government, chief of state, Head of the government and commander-in-chief of the armed forces.” Nigeria has three branches of power which comprise of the executive, legislative and judicial branch. The Nation’s National Assembly consists of the Senate and the house of representatives. Nigeria has a mixed legal system comprises of English common law, Islamic law (in 12 northern states), and traditional law. In 1999, Sharia law was instituted as the main body of civil and criminal law, 9 Muslim majority and some parts of 3 Muslim plurality states in Nigeria. (One World Nations Online).

Nigeria comprises of the 36 states and one territory; the 36 states have executive governors that govern the states with the state house of assembly and the state commissioners.

Then we have local governments in each state and the chairman elected as the head of the local governments with other principal officers like the supervisors. From the local governments, there are wards. Wards comprise of few communities in the local government. Wards are led by the ward chairman elected and other principal officers. The one territory is the capital of Nigeria, and it is in Abuja. The Federal Capital Territory (FCT) is not a state but the capital of Nigeria where the president and all other federal officials reside and govern, much like the United States District of Columbia (Washington DC). The federal capital does not have a governor but a minister of FCT. The country has different political parties, but the most popular ones are People's Democratic Party (PDP), All Progressives Congress (APC), Labor Party (LP), All Progressive Grand Alliance (APGA), Accord Party (AP), and Democratic People's Party (DPP).

United States government. United States of America (U.S.) is a federal constitutional republic which has its capital in Washington D.C. The government has three branches which are the executive, legislative, and judicial branch. The executive branch consists of the chief of state(president), head of government and the cabinet. The president and vice president were elected while the members of the cabinet were appointed by the president and approved by the Senate. The legislative branch consists of the bicameral congress which is the senate and house of representatives. In the Senate, there are 100 seats and two members directly elected in each of the 50 states constituencies. The house of representatives has 435 seats, and members were directly elected in single-seat constituencies by simple majority vote. The judicial branch consists of the United States supreme court which includes nine justices, the chief justice, and eight associate justices. The president nominates the supreme court justices with the advice and consent of the Senate. There is also a United States Court of Appeal for the federal districts and 12 regional appeals court. The United States has 50 states and one district. Each state has a

governor and other government officials that govern the affairs of each state. The one district is the capital of United States, and that is where the president and other federal officials govern the major political parties in the United States are Democratic Party, Green Party, Libertarian Party, and Republican Party. (World Factbook).

Demographics and Geographics

Nigeria is located in Western Africa, bordering the Gulf of Guinea, between Benin and Cameroon with a population 190.6million people that is projected to grow to 392 million people by 2050. This increase is due to a high birth rate, and the government has not successfully implemented family planning programs to reduce and space births. The most massive age structure is 0-14years which is 42-54% of the population, and this will still increase. Nigeria's government has the potential to advance its economic development to reduce poverty and unemployment of youth to meet the challenges posed by its rapid population. Additionally, Nigeria is a diverse nation with different ethnic groups, Nigeria has 250 ethnic groups, and the most influential ones are Hausa and the Fulani, Yoruba, Igbo, Ijaw, Kanuri, Ibibio, and Tiv. These ethnic groups have their languages which mean Nigeria has over 500 indigenous languages while the English language is the official language. (World Factbook).

The United States is in North America bordering both the North Atlantic Ocean, and the North Pacific Ocean, between Canada and Mexico with the population of 326.6million in July 2017. The United States is the world's third-largest country by size (after Russia and Canada) and by population (after China and India). Its major ethnic groups in the United States are White, Black, Asian, Amerindian, Alaska Native, Native Hawaiian, and other Pacific Islanders. The English language is the most popular language in the United States.

The most massive age structure is 25-54years which are 39.45% of the population. The age groups coming after them are deficient in population as compared to the age group of 25-54years. The deficient in population shows that a time will come when the United States will need more people to work because the age groups that are most populated will soon get to their retirement age and the age group coming after them will not be able to fill all the positions needed for work. To be future ready, the United States appears to be confronting an aging population demographics. Concurrently, its economy is rapidly accelerating to embrace advanced technologies and manufacturing. All of this is compounded by education and training systems that aim to meet the needs of supply through fewer employees that have the skillset demanded.

Therefore, Nigeria and the United States of America has some similarities and differences. Both Nigeria and the United States were colonized by the British though they gained their independence at different times. The two countries have the same system of government, and they are both a federal republic consists of three branches of government namely executive, legislative, and judicial branch. They run these three branches of government the same way regarding having the chief of state, head of government, cabinet, senate, house representatives, supreme court, and the court of appeal. The way the Nigerian government is run is like the United States. Nigeria and the United States do have their differences in their economic prosperity, population demographic profiles, their geography, and their education systems, specifically, the U.S. interpretation of education for employment through its Career and Technical Education focus and Nigeria through its Technical and Vocation Education and Training system.

Overview of Vocational and Technical Education

Vocational and technical education (also known as VET, TVET, and CTE) is one of the oldest forms of education in the world. It was formerly known as vocational education. It is described as education training for youths and adults to acquire knowledge, skills, competencies, structural activities, abilities and capabilities which are preparing the recipient to enter competitive employment in the various sector of the economy (Okolocha & Chimezie, 2012).

TVET has since transformed both in name and in practice over the years to be what it is today. It started informally within the family where father and mother taught their children the essential skills needed in life. In some forms, it is called a home apprenticeship. It was born from individuals and families to meet their basic and economic needs. It was also preparing people for work (Fafunwa, 1974).

Technical vocational education and training [TVET] is used 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. (TVETipedia n.d., para. 1)

New world encyclopedia (n.d). Stated that this type of education started to inform of apprenticeships where adolescents learned necessary skills for certain trades from a professional. During that time VET was perceived to be for individuals of a lower caliber (Fafunwa, 1974). In the 19th century, industrialization began in some part of the world, and VET was introduced into the school curriculum. (New world encyclopedia, n.d.). During the 20th century, technical and vocational education had formed a significant part of the educational system, and it has extended to industries. VET has since been tasked as a philosophy and practice employed across

comprehensive high schools, technical, and community colleges in training young people for gainful employment with credentials span technical certificates and associate degrees in specialized fields. (Gordon, 2014)

History of Vocational and Technical Education in Nigeria and the United States

According to Wikipedia (2018, December 31) "Vocational education is education that prepares people to work in various jobs, such as a trade, a craft, or as a technician. Vocational education is sometimes referred to as career education or technical education. Across the world, vocational education takes on many titles and with it come to a variety of meanings that are attributed to it. While all definitions highlight vocation, education, training, and technical skills there are differences in practice and perceptions (Pilz, 2012).

Nigeria. Okolocha and Baba (2016) stated that vocational and technical education in Nigeria has a diverse history and it begins in Nigeria during the colonial era. It existed in customary forms, and every individual had to work for their survival. During the colonial era, young people were trained in trades under the apprenticeship of their parents or relatives. It was not held to the same level of recognition as grammar school during the colonial era. Many people blamed this act for the missionary influence of education in Nigeria. In light of this, vocational and technical education has made slow progress as opposed to other forms of education in Nigeria. It is believed that this happened due to voluntary agencies which brought western education to Nigeria that was unable to increase vocational and technical education on the same scale as literary education (Fafunwa, 1974).

In 1908, the vocational training school was started by the government and in 1982 marine training school was founded. Public works, post, and telegraph, and railway training school were also established in 1931. The government started showing interest in technical education

between 1930 and 1960. In 1885, Nigeria's first technical institute was founded and called Hope Waddell Institution in Calabar. In 1934, Yaba higher college was created, and in 1948 it became the first vocational and technical institute in Nigeria. After that, Technical schools were established in various locations through government support. In 1959, Ministry of education in Nigeria set up a commission called Ashby commission to investigate the need for post-secondary education. The commission suggested that technical education needs proper awareness and that students who are studying technical drawing and crafts subjects need encouragement. In 1963, this commission endorsed three tiers of technical and vocational education such as pre-vocational and pre-technical training, craftsmen training, and vocational and technical training. The National Council of Education (NCE) endorsed the National Board for Technical Education (NBTE) in 1987; this brought vocational and technical education into schools. Today vocational schools are comprised of post-primary, post-junior secondary, post-senior secondary institutions (Okolocha & Baba, 2016).

Nigeria National Policy on Education (2013) stated three goals of technical and vocational education and training. First, to provide a trained workforce in the applied sciences, technology and business particularly at the craft, advanced craft, and technical levels. Secondly, to provide the technical knowledge and vocational skills necessary for agricultural, commercial and economic development. Finally, to provide training and impart the necessary skills to an individual for self-reliance economically (p. 16).

The goals above were to empower the pursuit of VET in Nigeria and to provide solutions to the prevailing economic problem. All this shows that vocational and technical education was in existence a long time ago and it is still present today.

The United States. In the U.S., Gordon (2014) stated that VET began in the early twentieth century as an adaptation of the young nations European immigrant's ideas of preparing youth for work. In the latter part of the nineteenth century, the need for vocational training produced several private trade schools and the major development before the beginning of the twentieth century was the establishment of the public schools of programs known as manual training, commercial training, domestic science, and agriculture. The industrial education system develops gradually after World War 1 into modern vocational education, and it was widely accepted (Gordon, 2014).

Technical and vocational education were initiated with the passing of the Smith-Hughes Acts in 1917, and this was done in order to reduce reliance on foreign trade school, reduce unemployment, protect national security and improve domestic wage capacity. In 1947, the George-Barden Act expanded federal support of vocational education to support careers beyond agriculture, trade, home economics, and industrialization. In 1958, the National Education Act was signed to improve education in science, mathematics, foreign languages, and national defense. In 1963, The Vocational Education Act added support for vocational education schools for work-study programs and research. In 1968, Vocational Education Act was modified and created National Advisory Council on vocational education. In 1984, The Vocational Education Act was renamed, Carl. D. Perkins Vocational and Technical Education Act. In 1990, The act was amended to create tech-prep programs and in 2006 Carl. D. Perkins Vocational and Technical Education Act were renamed, Carl. D. Perkins Career and Technical Education Act (Gordon, 2014).

The current Career and Technical Education (CTE) varies across states and education levels. It is presented in high schools, vocational high schools, academy schools, technical

colleges, and community colleges. While the aim of the comprehensive high schools is different from post-secondary education, the systems interact through a multitude of articulation mechanisms (Gordon, 2014). The secondary school teaches the skills necessary to help students acquire the academic and career skills to advance into work or post-secondary education. Post-secondary CTE in the United States provides opportunities to earn certificates and degrees are in-demand and provide certificate and degree completers a fast track to the workforce or advanced education and training credentials.

Future of Education and Training

Interest and support for Vocational Education have multiplied over the past few years especially in the United States where policymakers were working towards advancing and engaging students in CTE (Kreamer, 2017). There exists a call for strengthening the links between education and workforce to meet the current and yet to be envisioned landscape of the future work. These have implications on PK-12 CTE because education and training system must be ready and responsive to traverse from the current knowledge age to one that envisions social, economic and technological in a manner that advances the human condition within a global economy. Although CTE is advancing there are issues and problems that need to be addressed in CTE/TVET.

Common Issues and Challenges in CTE/TVET

Nigeria and United States vocational education has some issues in common although they still have issues that are different from each other. One of the common issues of vocational education in Nigeria and US is the perception and misconception of vocational education by the people. According to Colorado Succeeds (n.d) "CTE is mired in misconceptions and stigmatized as route strictly for failing student or an option for students not college bound." Also, Okoye and

Arimonu (2016) indicate that Nigeria placed too much emphasis on university education as opposed to technical education; thereby, forgetting to prepare the degree holder the required knowledge or skill needed to engage in work that is in demand.

In Nigeria public service, graduates of technical education are undervalued according to (Okoye & Arimonu, 2016). It is therefore plausible that its population mostly perceive its technical schools being only for those people that relegated to sub-professional employment. This surfaces as a core issue of vocational and technical education in both Nigeria and the United States. Another common issue is education Funding and teacher shortages. CTE/TVET needs teachers that are well trained for a more academic and technological curriculum and delivery system. For example, in the US a registered nurse can earn more than Health Educator within a high school or technical school (Colorado Succeeds, n.d.).

In Nigeria, the teachers need to be trained, and there is no adequate funding. (Okoye & Arimonu, 2016). Okoye and Arimonu (2016) said in Ojimba (2012) that "the salary and service benefits paid to technical education teachers in Nigeria is about the lowest in the world. (para. 17). This suggests that low salary and inadequate funding are affecting technical schools in their ability to attract well qualified and adequately trained teachers.

Summary

The literature review focused on the historical context and history of vocational and technical education across Nigeria and the United States. Emphasis was placed on the history, economics, government, demographics/geographics profiles of Nigeria and the United States. Additionally, an emphasis was placed on the history of vocational and technical education, common issues and challenges, the future of education and training in CTE/TVET. Though the literature review advancement opportunities become apparent. One such advancement is the

opportunity to impact both nations' economic prosperity through leveraging its opportunity to invest in the implementation of policies and programs that elevates their respective populations in finding the right balance between education and education for occupations success that is consistent with their respective economies.

Chapter III: Methodology

The purpose of this study is to identify what a highly developed (HDN) and a lesser developed (LDN) nation can learn from each other's TVET systems. This study can contribute to better understanding of both, Nigeria's TVET and the United States CTE systems, in order to positively affect their effectiveness.

This study was conducted to compare vocational and technical education system in Nigeria with career and technical education in the United States (U.S.) with the aim of identifying what a highly developed (HDN) and a lesser developed (LDN) nation can learn from each other's equivalent systems. Three objectives will guide the study; they are

1. Illustrate the context in which the Nigerian and the U.S. Midwestern States (Wisconsin, Minnesota, Illinois and Michigan) technical education and training systems exist.
2. Describe similarities and differences between the Nigerian and the U.S. Midwestern States of Wisconsin, Minnesota, Illinois and Michigan) technical education and training systems.
3. Identify opportunities and challenges confronting CTE/TVET within the U.S. and Nigeria.

This study can contribute to better understanding of both, Nigeria's TVET and the United States CTE systems, in order to positively affect their effectiveness.

Method

This study will be descriptive mixed methods study. It employs both quantitative and qualitative data. The mixed method is appropriate for this study because it is based on a rational worldview. Creswell (2013) states that "for the mixed methods researcher, pragmatism opens the

door to multiple methods, different worldviews, and different assumptions, as well as different forms of data collection and analysis" (p 11). According to Creswell & Plano-Clark (2011), The focus of research from the pragmatic worldview is on "the question asked rather than the methods" (p 41) and this research study will be focusing on the question asked rather than the methods. This process will focus on "what works and practice" (Creswell & Plano-Clark, 2011, p. 41), and it will allow the study to take both biased and unbiased perspectives, "valuing both objective and subjective knowledge" (Creswell & Plano-Clark, 2011, p. 43).

There are many benefits to using mixed methods in this study. Firstly, quantitative data proves a broad understanding of a problem while qualitative data provides detailed insight. (Creswell, 2013). Secondly, neither a qualitative nor a quantitative approach is adequate to give understanding to the concept of this study. Lastly, the findings of one approach can be understood better with the second source of data (Creswell & Plano-Clark, 2011). Lichtman, M, (2013) explains that many of the "journal articles present quantitative results before the qualitative" (p.16). This study will also treat quantitative results before qualitative.

Subject Selection and Description

This study used secondary sources of data collection from relevant textbooks, journals, and websites. 1) *They describe similarities and differences between the Nigerian and the U.S. Midwestern States of Wisconsin, Minnesota, Illinois and Michigan) technical education and training systems, 2) Illustrate the context in which the Nigerian and the U.S. Midwestern States (Wisconsin, Minnesota, Illinois and Michigan) technical education and training systems exist. To meet the studies objective 3) Identify opportunities and challenges confronting CTE/TVET within the U.S. and Nigeria.* Interviewees were selected. The study identified CTE leaders that were knowledgeable about their respective countries CTE/VET system. The study focuses on

four interviewees who were identified by both the researcher and their research advisor based on their affiliation as leaders and teachers within the U.S. and Nigerian technical schools.

Interviewees will represent, one administrator and one teacher that represent the US and Nigerian technical college teaching and leadership in the CTE/TVET system. The studies research objectives were the guidelines for the interview questions and information obtained was analyzed according to the research questions

Secondary data. To represent the United States, the research utilized four mid-western states as the example edge to their partners in Nigeria. The state of Wisconsin, Minnesota, Illinois, and Michigan were selected because the United States is vast and each state in the United States has different policies for their education. Also, these four states (Wisconsin, Minnesota, Illinois, and Michigan) have things in common about education, and they are in the same territory. The rationale employed in choosing the four states against Nigeria is the population of the four states and am within the territory of the four states where information can be quickly gathered instead of using the entire United States.

Primary data. The interview questions are direct decedents from the study's research objective 3, and the participants were school teachers and administrators. Phone, Skype, and e-mail were used to contact the participants. The population of the study was two school teachers and two school administrators from vocational institutions in the United States and Nigeria.

Instrumentation

The study used both secondary data and interview capta collection instrument.

Secondary data. The collection of the secondary data was done through relevant textbooks, and websites. This was appropriate in that data is readily available through databases

and validated websites such as the CIA World Fact Book, World TVET Database, and the International Monetary Fund. The data collection was structured (see Appendix 1).

Interview capta. The interview method was used for this study to get the necessary information. The questions were designed for teachers and administrators in Nigeria and United States to get adequate information about what is going on in each system and to be able to compare vocational and technical education in Nigeria with career and technical education in the United States. The questions were informed through the secondary data collection. In the process of developing the semi-structured interview script, RO3 *Identify opportunities and challenges confronting CTE/TVET within the U.S. and Nigeria* was employed to develop three grand tour questions. Figure 1 illustrates how the questions are employed within the respective geographic regions (the frame of this study):

Nigeria TVET	U.S. (Wisconsin, Minnesota, Illinois, and Michigan) CTE
<p>Tell me about your countries technical, vocational, education and training system...</p> <ul style="list-style-type: none"> • Tell me more about (something they said) • You shared (something of interest), can you explain what you meant by that? • (ask narrowing questions as needed) 	<p>Tell me about your countries career and technical education and training system...</p> <ul style="list-style-type: none"> • Tell me more about (something they said) • You shared (something of interest), can you explain what you meant by that? • (ask narrowing questions as needed)
<p>Can you tell me about some current issues and problems your countries technical, vocational, education and training system is faced with?</p> <ul style="list-style-type: none"> • Tell me more about (something they said) • You shared (something of interest), can you explain what you meant by that? • (ask narrowing questions as needed) 	<p>Can you tell me about some current issues and problems your countries career and technical education and training system is faced with?</p> <ul style="list-style-type: none"> • Tell me more about (something they said) • You shared (something of interest), can you explain what you meant by that? • (ask narrowing questions as needed)
<p>Can you tell me about some of the opportunities your countries technical, vocational, education and training system has in the next few years?</p> <ul style="list-style-type: none"> • Tell me more about (something they said) • You shared (something of interest), can you explain what you meant by that? • (ask narrowing questions as needed) 	<p>Can you tell me about some of the opportunities your countries career and technical education and training system has in the next few years?</p> <ul style="list-style-type: none"> • Tell me more about (something they said) • You shared (something of interest), can you explain what you meant by that? • (ask narrowing questions as needed)
<p>Reflecting on the prior questions, what is something that gives you hope for the future of your country that technical, vocational, education and training can affect?</p>	<ul style="list-style-type: none"> • Reflecting on the prior questions, what is something that gives you hope for the future of your country that career and technical education and training can affect?

Figure 1. Semi-structured interview guide.

Data Collection Procedures

This study will use both secondary and primary data collection. The reason for using this to collect both the quantitative and qualitative data. The procedure to be used for each one is stated below.

Secondary data collection. The procedure is to collect useful data and statistics from relevant textbooks, and websites about the sample states that represent the United States and Nigeria. The data and statistics include the Demographics, Gross Domestic Product (GDP per

capita), Natural resources, educational attainment, school enrollment, a workforce of the states representing the United States and Nigeria.

Primary data (Capta) collection. The target population for the data collection was vocational and technical school teachers, administrators of vocational and technical schools. Vocational and technical schools were randomly selected in both Nigeria and Wisconsin, United States. Some teachers and administrators were interviewed through different technology like phone, Skype, and face time. Some were interviewed by face to face interview. Documentation that related to the history of vocational and technical education, enrollment, no of programs, statistical records were collected (see Table 1).

Data Analysis

The study used both secondary and primary data analysis. The design used to analyze the data are statistical and content analysis.

Secondary data. Statistical analysis was utilized based on the research objectives and data collected. It is appropriate for this study because it is a descriptive mixed method study.

Primary data. The Interview responses were analyzed through content analysis of the following research objectives:

1. Understand similarities and differences between the Nigerian and the U.S. Midwestern States of Wisconsin, Minnesota, Illinois and Michigan) technical education and training systems.
2. Illustrate the context in which the Nigerian and the U.S. Midwestern States (Wisconsin, Minnesota, Illinois and Michigan) technical education and training systems exist.

3. Describe opportunities and challenges confronting CTE/TVET within the U.S. and Nigeria

A thematic analysis process was utilized. Procedurally it was adapted from Haltinner (2008) who describes it as follows.

Qualitative responses were interpreted utilizing a human sciences approach. Van Manen (1997) describes hermeneutic phenomenology as "descriptive or interpretive methodology, it is also a critical philosophy of action" (p, 154). He suggests that a phenomenon is a philosophy that always involves the pedagogic action. Describing the interviewee's intended meaning, while respecting the individual subject's context, requires the researcher to access descriptive text to guide the interpretation. (p, 71)

Raw Capta	Codes Reduction of Raw Capta	Categories Themes based on original Capta	Concepts Declaring the Themes
Raw text as presented via the transcription process. Nothing is removed.	Eliminating extraneous words in an effort to clarifying its structural meaning.	Captured from the meaning units are the phrases that present an idea or concept	Declaring themes requires maintaining the integrity across all previous steps.

Figure 2. Thematic analysis process. (Adapted from Van Manen, 1997 and Haltinner, 2008)

Limitations

It was challenging to get a comprehensive report on vocational and technical education in Nigeria dues to reliance on secondary web resources sources which may not have accurately represented the precise data points. Additionally, it proved difficult to access interviewees in Nigeria.

Chapter IV: Results

This chapter presents the findings of a comparative analysis of career and technical education between Nigeria and the United States (U.S.) with the aim of identifying what a highly developed (HDN) and a lesser developed (LDN) nation can learn from each other's equivalent systems.

Findings

Findings will be presented in the sequence of the study's research objectives (RO).

1. Illustrate the context in which the Nigerian and the U.S. Midwestern States (Wisconsin, Minnesota, Illinois and Michigan) technical education and training systems exist (RO1).
2. Describe similarities and differences between the Nigerian and the U.S. Midwestern States of Wisconsin, Minnesota, Illinois and Michigan) technical education and training systems (RO2).
3. Identify opportunities and challenges confronting CTE/TVET within the U.S. and Nigeria (RO3).

Interviewee Profiles

Interviews were conducted individually with each of four individuals, three representing the United States technical and community colleges and one interviewee representing Nigeria. The following presents each of them using a pseudonym name.

Georgios is employed as an automotive technology program instructor teaching within a technical college in Illinois. He transitioned into teaching from business and industry. He gained industry experience as an automotive service technician. Aside from teaching, he is involved in promoting automotive teaching program to high school students. He is also involved in program

support, resource maintenance, and maintaining supplies. In support of the aforementioned, Georgios stated, “the automotive occupations have a dire shortage of youth that sees it as a viable occupation.” He demonstrated a passion for the automotive professions and excitement in sharing his ideas during this interview.

Cion serves as dean of technical management in a technical college in Wisconsin. He is also an instructor in his department. He has made a significant contribution to career and technical education in his institution and the state of Wisconsin. He has a passion for his job and in connecting the technical college to high schools. He was ready to share his knowledge about career and technical education in Wisconsin and the United States.

Sumatra is employed in a Midwestern state leading the state’s public kindergarten through 12th grade CTE subject area programs inclusive of Family and consumer sciences, Business, Health Sciences, Marketing, and Technology Education programs. Administrator in CTE in Wisconsin. Sumatra stated that her institution “provides a variety of services, everything from compliances activities for the federal grant program, instructional materials and related curriculum to help teachers in their classroom to deliver quality instruction. Sumatra was passionate about her job that she was ready to share more about her job during the interview.

Sasha is a lecturer in Business Education at a university in Nigeria. She teaches both undergraduate and post-graduate studies in the department of vocational education. Her major is business education, and she was excited to share what she knows as a business educator in Nigeria during the interview.

Research Objective 1

The following findings specifically inform RO1; Illustrate the context in which the Nigerian and the U.S. Midwestern States (Wisconsin, Minnesota, Illinois and Michigan)

technical education and training systems exist. Collectively; the U.S. states represent similarity in population, economic resources, along with urban and rural dispersion of its population which compares to Nigeria. Regarding the population, Nigeria represents about six times the population of the four Midwestern States in the United States. The combined population of the four states is about 34 million people while that of Nigeria is about 191 million people. Also, Nigeria has about three times the geographical area of the four states representing the United States. Nigeria and the four states have almost the same natural resources like petroleum, iron ore, coal, etc. Table 1 illustrates that female is more than male in the United States while in Nigeria male is more than female. The data showed that the age group of 24-54 years has the largest population in the United States while in Nigeria ages 0-14 years has the largest population that is why the median age of United States is 38.1 and Nigeria is 18.4 years. Also, the data shows that both the United States and Nigeria has more population between the ages of 0-14 years than ages between 15-24 years. The population between the ages of 25-54 years are more than the population between ages of 15-24 years in both United States and Nigeria. Lastly, Both United and Nigeria have less population for the ages of 55 years upward. Looking at it from an Economic resources perspective highlights that the United States has a substantially higher GDP per capita than Nigeria. It also shows that Nigeria has about three times the geographical area and its corresponding natural resources than the states representing the United States. Additionally, Nigeria shares a significant similarity in natural resources like petroleum, iron ore, coal, and so forth.

Table 1

Demographic Comparatives Profile

Criteria	WI	MN	IL	MI	US/States	Nigeria
Gender						
Population	5,754,798	5,450,868	12,851,684	9,909,600	33,966,950	190,632,261
Male	2,859,055 (49.7%)	2,710,157 (49.7%)	6,310,460 (49.1%)	4,869,885 (49.1%)	16,749,557 (49%)	97,192,464 (51%)
Female	2,895,743 (50.3%)	2,740,711 (50.3%)	6,541,224 (50.9%)	5,039,715 (50.9%)	17,217,393 (51%)	93,439,797 (49%)
Age Profile by Year Range						
0-14	1,076,321 (18.6%)	1,068,511 (19.6%)	2,470,007 (19.2%)	1,822,923 (18.4%)	6,437,762 (18.9%)	81,102,008 (42.54%)
15-24	787,225 (13.7%)	720,223 (13.2%)	1,763,393 (13.7%)	1,403,796 (14.2%)	4,674,637 (13.8%)	37,384,412 (19.61%)
25-54	2,236,410 (38.9%)	2,172,617 (39.9%)	5,221,100 (40.7%)	3,792,861 (38.3%)	13,422,988 (39.5%)	58,604,042 (30.74%)
55-64	779,622 (13.6%)	710,112 (13%)	1,613,087 (12.5%)	1,362,322 (13.7%)	4,465,143 (13.2%)	7,570,027 (3.97%)
65 or >	875,220 (15.2%)	779,405 (14.3%)	1,784,097 (13.9%)	1,527,698 (15.4%)	4,966,420 (14.6%)	5,971,772 (3.13%)
Median	39.1 years	37.8 years	37.4 years	39.5 years	38.1 years	18.4 years

(Continued)

Table 1 Continued

Criteria	WI	MN	IL	MI	US/States	Nigeria
Economic Resource						
GDP Per Capita	\$53,565	\$60,716	\$61,837	\$49,076	\$57,600	\$5,900
Geographic sqkm	\$65,496	\$86,935	\$57,913	\$96,713	\$307,059	\$923,768
Natural resources	Rich Soil, Minerals, Lumber Water	Iron-ore Manganese Granite Limestone Fertile Soil	Petroleum Fertile Soil Coal Lumber	Petroleum Iron-ore Limestone Fish and Wildlife	Coal Copper, Petroleum, Natural Gas Lumber Iron ore Fertile Soil	Petroleum Natural Gas Tin Iron ore Coal, Limestone, Lead

According to table 2, Nigeria has 58% fewer high school graduates while the states representing the United States have fewer than 10%. The states representing the U.S. have less than 32% slightly with some college or associate degree, and 31% have an earned bachelor's degree or higher while in Nigeria only 11% of its population has earned some college, associate degree, without any firm indication of bachelor's degree or higher. The data highlights that the states representing the U.S. have a more of its population going to a two years degree and four years degree than Nigeria.

Table 2

Educational Degree Attainment

Criteria	WI	MN	IL	MI	US/States	Nigeria
Less than high school graduate	8.7%	7.4%	11.7%	10.1%	9.5%	57.7%
High school graduate	31.7%	25.7%	26.5%	29.6%	28.3%	31.7%
Some college or associate degree	31.3%	32.7%	28.9%	32.9%	31.5%	10.7%
Bachelor's degree or higher	28.3%	34.3%	32.9%	27.4%	30.7%	NA

Table 3 shows the school enrollment in Nigeria and the four states representing U.S. Data supports that in both Nigeria and the United States more children enrolled in elementary schools than pre-school/kindergarten. Data also shows that many children that graduated from elementary school did not enroll in high school. Again, the data shows that not all student that graduated from high school enrolled in post-high school education. Lastly, the U.S. has more people that move onto college, university and graduate education than Nigeria.

Table 3

School Enrollment

Criteria	WI	MN	IL	MI	US/States	Nigeria
Pre-school-Kindergarten	162,669	165,041	396,705	265,943	990,358	2,416,235
Elementary grade 1-8	583,865	568,231	1,344,034	997,788	3,493,918	26,288,736
High school grade 9-12	305,085	292,619	703,720	543,029	1,844,453	10,640,519
College and University	348,754	309,837	744,642	628,804	2,032,037	1,614,513
Graduate School	61,959	65,236	195,527	126,569	449,291	NA

Research Objective 2 and 3 Findings

The following findings specifically inform RO2; Describe similarities and differences between the Nigerian and the U.S. Midwestern States of Wisconsin, Minnesota, Illinois and Michigan) technical education and training systems. The following themes emerged and are presented by each of the prompts used across each of the four interviews.

Figure 3 highlights that the interviewees see themselves serving a wide range of professional roles. Their roles are never singular on appear to step into based on need. The report being instructors with a multitude of duties inclusive of leading and coordinating program curricula responsive to industry needs. Their roles exemplify that of the pre-industrial and labor specialization era, the farmer or merchant that fluidly could step into being an accountant, sales manager, production worker, maintenance, forecaster, and so forth.

 Prompt 1, Theme(s)

- The chameleon teacher, leader, manager, and resource adaptive and competent across a multitude of duties spanning beyond the job of teaching
-

Figure 3. Interviewee’s role in their institution.

Figure 4 illustrates the interviewees’ ideology as it relates to seeing their purpose of preparing their students (adolescent, and adult) to be workforce ready by training them to acquire technical and vocational skills. As an interviewee stated “...CTE provides industry-specific training to students, and this helps them to have specific skills to obtain employment.” They also share that the persistent message of the university baccalaureate degree may not always be the appropriate route for student advancement into gainful employment.

 Prompt 2, Theme(s)

- Maximizing individuals' economic outcomes; thereby, advancing the nation's economy.
 - Maximizing individuals' economic outcomes; thereby, advancing the nation
 - Maximizing individuals' economic outcomes; thereby, advancing the nation's economy.
 - CTE/TVET being vital to the advancement of society.
-

Figure 4. Purpose of CTE/TVET in their institution.

Figure 5 illuminates the idea that CTE encompasses a wide range of students. It encompasses career transition, unemployed seeking to reengage into the workforce with needed skills, up-skilling to advance their positions and maintain their relevance as an employee. CTE has a diverse audience because it involves different categories of people regarding age, culture, language, sex, and so forth.

 Prompt 3, Theme(s)

- Diverse of individuals spanning youth through adults retaining up-skilling and advancing their career trajectory
-

Figure 5. Typical student served by their countries CTE/TVET program.

Figure 6 presents that programs largely mimic the 16 U.S. P21 Career Clusters. Clusters related science technology, health care, and business are prominent. Additionally, meeting the future of work and sub-themes indicating programming specific to student retention and achievement being.

Prompt 4, Theme(s)
<ul style="list-style-type: none"> • Use the Career Clusters as the taxonomy to show the spectrum of coverage 16 career clusters job list <ul style="list-style-type: none"> ○ Student retention supports and programs ○ Programs for merging individuals into needed occupational trajectories ○ Programs are serving the current and envisioned future of work.

Figure 6. Interviewee description of systems technical programs.

Figure 7 presents CTE being responsive to labor dynamics and economic resource allocation within an economy locally, regionally and nationally. The theme highlights CTE/TVET progressively launching revised and new programs responsive to both personal growth such as financial literacy and those responsive to long-term economic expansion such as entrepreneurship education, stem education, and computer science. Additionally, immediate need programs like welding, apprenticeship, healthcare, culinary, agricultural and home-economics education are offered in CTE.

Prompt 5 Theme(s)
<ul style="list-style-type: none"> • An entrée of programs serving the current and envisioned future of work.

Figure 7. New or trend technical programs.

Figure 8 presents CTE being as vital to the advancement of society by taking the lead from economic indicators, business, and industry needs and social challenges and opportunities. Additionally, interviewees share that CTE serves as a local, regional and national response mechanism to positively affect unemployment, and feedback from people.

 Prompt 6, Theme(s)

CTE as vital to the advancement of society.

- Through economic indicators, business, and industry needs and social challenges and opportunities
 - Looking towards the current and envisioned future of work.
-

Figure 8. Description of how program need becomes evident.

Figure 9 presents that CTE/TVET is going through some significant issues such as funding, lack of technical, reading and comprehension skills by students, misconception of CTE, inadequate aged facilities, technologies that advance rapidly leaving the learning laboratories/classrooms behind, and transfer of technical skills to baccalaureate institutions

 Prompt 7, Theme(s)

- Highly developed and developing nations (the United States and Nigeria) are going through similar challenges.
 - A hope, concern, and expectation that CTE/TVET advances the current needs will evolve to find its future purpose.
 - Questioning of whether CTE/TVET will be the means to advance the nation/state within a hyper change globally competitive environment
-

Figure 9. Emerging or current issues the CTE/TVET faces.

Figure 10 presents that many opportunities lie in CTE in the nearest future. The opportunities are better pay for students with technical skills since many skilled workers will retire and there will be demand for skilled workers and apprenticeship. Reauthorization of Carl D. Perkins legislation is another opportunity because there will be more funds available. Re-commitment between education, business and industry will also bring opportunity to CTE. Awareness of CTE will improve the economy because many students will be ready to acquire technical and vocational skills which will make them be self-reliance.

 Prompt 8, Theme

- Hope and expectation of what CTE will be in the years to come
-

Figure 10. Envisioned future challenges CTE/TVET programs may face.

Figure 11 presents that there is a cause of concern and hope for CTE in our nations. The coming and current shortage of skilled labor, clarity of the value of CTE, teachers licensing going to the extreme, and losing momentum with business education partnership will cause an issue. The hope is that the unemployed, drop out and low-income people will help CTE to train more people in technical education. Also, the economy will improve.

Prompt 9, Theme

- A tension and hope for CTE/TVET as a system within meeting the state or nations workforce needs
-

Figure 11. Percieved future for CTE/TVET.

Figure 12 presents that there are more things about CTE, and these are, struggles to see students coming into 2years college, career pathway is delivered through state and privately funded money, and national leaders are strong advocates of CTE/TVET, and that there should be interaction with other countries to learn from each other.

Prompt 10, Theme

- What to know is vital to an evolving direction CTE.
-

Figure 12. Other comments on CTE/TVET as a system.

Chapter V: Discussion, Conclusions, and Recommendations

This chapter presents the findings of a comparative analysis of career and technical education between Nigeria and the United States (U.S.) with the aim of identifying what a highly developed (HDN) and a lesser developed (LDN) nation can learn from each other's equivalent systems.

A discussion will be presented employing the study's research objectives; they are 1) *Describe similarities and differences between the Nigerian and the U.S. Midwestern States of Wisconsin, Minnesota, Illinois and Michigan) technical education and training systems,* 2) *Illustrate the context in which the Nigerian and the U.S. Midwestern States (Wisconsin, Minnesota, Illinois and Michigan) technical education and training systems exist,* and 3) *Identify opportunities and/or challenges confronting CTE/TVET within the U.S. and Nigeria.*

Discussion

Similarities and differences between the Nigerian and the U.S. Midwestern States of Wisconsin, Minnesota, Illinois and Michigan) technical education and training systems highlights that the U.S. Midwestern states and Nigerian CTE/TVET systems are similarly focused on preparing students to enter into the workforce to advance regional and national economic success.

Across the study's research objectives, the U.S. comparison states highlight there is a significant push on messaging CTE/TVET as a critical workforce development education and training system. In both the U.S. and Nigeria, it is about creating interest in its population to access CTE/TVET education and training to drive its population's skills in industry and trades.

Within the U.S's comparison states there is significant energy spent on secondary-level (High School) CTE coursework that transitions through career pathway arrangements into

articulation/transferring high school credit to technical colleges and universities as supported by one interviewee that states. “The purpose of CTE is to advance academic and technical skills in all students” similarly an interviewee stated, “In Nigeria, TVET is to empower youth to acquire skills and to become self-reliant.” According to Nigeria national policy on education (2013) stated three goals of technical and vocational education and training. Firstly, "to provide a trained workforce in the applied sciences, technology and business particularly at the craft, advanced craft, and technical levels. Secondly, to provide the technical knowledge and vocational skills necessary for agricultural, commercial and economic development. Lastly, to give training and impart the necessary skills to an individual for self-reliance economically.” (p.16). Across the U.S and Nigerian comparative, it shows CTE/TVET have a similar purpose in preparing individuals to be workforce ready with technical and vocational skills. The two systems (CTE/TVET) also appear to be intent on maximizing individuals’ personal, economic outcomes; thereby advancing the individuals personal economy and the regional and national economy.

The difference between CTE in both countries addressed by RO2 question of *describing the typical person that your countries career and technical education and training system serves?* In the United States (Mid-Western states) one interviewee responds that their primary audience is the CTE coordinators and teachers. Another one said is for people who are looking for training to enter a career or those that want to transfer credit to a four-year institution while in Nigeria, the interviewee said the typical person of vocational education is the youth and the unemployed. Although the audience of CTE is various because it includes different classifications of individuals regarding age, culture, dialect, sex, and so forth. However, it shows

that the United States (mid-western states) and Nigeria have different audiences they focused on regarding vocational education.

Research objective 2. Illustrates the context in which the Nigerian and the U.S. Midwestern States (Wisconsin, Minnesota, Illinois and Michigan) technical education and training systems exist. In United States (mid-western states) one interviewee explained that “the program needs became evident from early 1900 and the united states and mid-west have gone through different eras regarding an industrial era coming out into technology era and information age.” The other interviewee said it became evident through local employment and feedback from people while in Nigeria it became evident due to the weak economy and high unemployment rate.

Research objective 3. Identifies opportunities and challenges confronting CTE/TVET within the U.S. and Nigeria. In chapter two of this study, the common challenges facing CTE/TVET in the United States and Nigeria were mentioned and was supported across all interviewees. According to Colorado Succeeds (n.d) "CTE is mired in misconceptions and stigmatized as route strictly for failing student or an option for students not college bound." Also, Okoye and Arimonu (2016) said Nigeria placed too much emphasis on university education than technical education not minding whether the holder possesses the required knowledge or skill. In Nigeria public service, graduates of technical education are underestimated. (Okoye & Arimonu, 2016). It shows that people believe technical schools is for those people that are not intelligent, and this is one of the core issues and challenges of vocational and technical education in both Nigeria and the United States.

Another common issue is education Funding and teacher shortages. CTE/TVET needs teachers that are well trained for a more academic and technological curriculum and delivery

system. For example, in the US a registered nurse can earn more than Health Educator within a high school or technical school (Colorado Succeeds, n.d.). In Nigeria, the teachers need to be trained, and there is no adequate funding. (Okoye & Arimonu, 2016). Okoye and Arimonu (2016) said in Ojimba (2012) that "the salary and service benefits paid to technical education teachers in Nigeria is about the lowest in the world (para. 17). Which means low salary and inadequate funding is affecting technical schools to have well-trained teachers. There are still some other issues about each country; these are the common issues and challenges of CTE/TVET in Nigeria and the United States. The interviewee in both United States and Nigeria indicated that challenges and opportunities are confronting CTE/TVET in both countries.

Conclusions

This study researched what a highly developed nation like the United States and a lesser developed nation like Nigeria can learn from each other. After researching and comparing the highly developed nation with a lesser developed nation, it was found that both can learn from each other, but the lesser developed nation needs to learn more from the highly developed nation. In other words, Nigeria should learn more from the United States.

Career and technical education in the United States are thriving, and it is helping them to build their economy though they still think they have some issues to tackle, they have done an excellent job by advocating for it in their country and include it in their school curriculum. Nigeria needs to learn from them because the government has neglected technical education and it is affecting the economy of the country. At the point when a nation cannot flaunt a talented all-around expert like woodworkers, painters, auto mechanics, and so forth. Every facet of the economy has been affected by a lack of skilled technicians. From experience, no child or parent want their children to go into a technical school, everybody wants to go to a university, and it is

not their fault because technical education in Nigeria has been neglected and there is no awareness about it to the citizen. Everybody believes anyone that want to go to a technical school must be somebody that is not sound academically and it has been a significant obstacle to national development.

In conclusion, Nigerian leaders must recognize the relevance of technical and vocational education in national development and adopt or adapt what works in developed nations like the United States. Also, The Nigerian leaders and educators must re-brand their mentality and do the right thing that will help her economy and her citizen the way the United States has done.

Recommendations

The findings of this study highlight that Technical Vocational Education and Training in Nigeria need restructuring and the government of Nigeria needs to have a total change of attitude towards technical and vocational education in Nigeria. The Career and Technical Education system in the United States need to work on the restructuring they have started to make it more substantial. These are the overarching recommendations for both Nigeria's TVET and United States CTE system.

- Intentional pre-vocational subject exposure in primary and secondary schools may be a sustainable way to raise academic and career interest.
- Increased investment in making TVET/CET available across rural and urban populations; thereby, impacting student engagement and persistence in continuous learning.
- Meeting the current and future needs for skilled workers must increasingly be achieved through education policy and funding that is attuned to technological,

economic, life-stage of knowledge and skills, along with population demographic shifts.

- Advancing experiential education through work-based learning through internships, cooperative occupation education, youth apprenticeship, and registered apprenticeship programs can expand the impact traditional education and training systems.
- A sustained re-commitment to equitable collaboration between business and industry that informs policy, funding, standards, and curriculum; thereby, promoting the continuous renewal of human resource development via CTE and TVET.

Recommendation for teacher preparation. Highlights that vocational education and training teachers their programs and institutions in Nigeria;

- train competent teachers in the use of both instructional technology and information communication technology to positively impact student learning,
- Invest in instructional and applications laboratories to advance student learning through experiential learning that is consistent with the advanced industry skills needed.
- Intentionally manage the economic and career advancement possibilities resulting from successful engagement in vocational education and training.

Recommendation to teacher leaders. Highlight vocational education and training (TVET/CTE) that is high quality through the following recommendations;

- initiate and share research on the value of career and technical education as a college and career pathway readiness to students in the United States especially the high school students

- Providing high-quality professional development to aspiring and current career and technical education teachers in the United States is essential.
- Providing certification options for well-qualified industry experts to become career and technical education instructors in colleges in the United States will need to become a serious consideration.
- In the U.S. and Nigeria, CTE and TVET can advance academic and career readiness to help the students intentionally plan a program of study leading them into a career that befits their interests and skills.

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Appendix: Data Collection Instrument and Process

The following table illustrates the secondary data collection instrument and process utilized to collect and organize the data for the comparison between the states (Sample Frame) representing the US as compared to Nigeria.

Criteria	WI	MN	IL	MI	Composite
Gender					
Male					
Female					
Age Distribution					
0-14years					
15-24years					
25-54years					
55-64years					
65years&Over					
GDP Per Capita					
Natural Resources					

Educational attainment of 25 years and over

criteria	WI	MN	IL	MI	Composite
Less than high school graduate					
High school graduate					
No degree, some college or associate degree					
Bachelor's degree or higher					

School Enrollment of 3 years and over

Criteria	WI	MN	IL	MI	Composite
Pre-school-Kindergarten					
Elementary grade 1-8					
High school grade 9-12					
College, Undergraduate					
Graduate, Professional School					