

IMPLEMENTATION OF TECHNICAL AND VOCATIONAL EDUCATION IN
NIGERIA

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A thesis submitted in the fulfilment of the
requirements for the award of the degree of
Doctor of Philosophy (Technical and Vocational Education)

Faculty of Education
Universiti Teknologi Malaysia

JANUARY 2013

To my beloved late mother, father, wife, children and family

ACKNOWLEDGEMENT

First and foremost I would like to thank my supervisor, Professor Dr. Muhammad Rashid Rajuddin, who guided me throughout my study period in Universiti Teknologi Malaysia. He has trained me to be a researcher, an administrator and academician. His personal life towards assisting fellow researchers, students as well his colleagues has actually taught me a lesson that remains in my heart forever. I am highly grateful for his quality of training, openness, and dedication which is worth of emulation.

I also wish to express my profound gratitude to Dr. Amirmudin Bin Udin and Dr. Azlan Bin Abdul Latib of the Department Technical and Engineering Education, Universiti Teknologi Malaysia and also my friends Mr. Zhurad Haron and Mr. Ehab Abodi for their assistance, guidance and support throughout the process of my research work.

My gratitude goes to Professor Muhammad Abdullahi of the Department of Science and Technical Education, Bayero University Kano-Nigeria for his inspiration and moral support towards my study. I wish to thank Professor Abdalla Uba Adamu, Dr. Nuraddeen Magaji, Muhammad Sadi Abdullahi, Isa Abubakar, Aliyu Adamu Kofar Na'isa, Alhaji Gambo (driver), Malam Hashim Alhasan and the entire members of the Department of Science and Technical Education, Bayero University Kano-Nigeria as well as my brothers Nasiru Musa Sheshe and Ado Idris, my sisters, friends, colleagues and other well-wishers.

I would also like to express my sincere gratitude to my father for his moral support he has been given to me towards the whole process. I also thank my children Idris (Aiman), Adam (Hanif) and Habiba (Hanifa) for their patience throughout my absence. It is my prayer that they should also emulate from my effort and appreciate

the importance of education and also achieve the highest educational qualification in their lives.

Lastly, my great and sincere appreciation goes to my beloved wife Amina Ado Kibiya for her support, encouragement, understanding, courage and patience throughout the difficult times she passed through during my absence. I am highly grateful to her and wish her the blessings of Allah.

ABSTRACT

This research was conducted to identify the factors that affect the implementation of technical and vocational education in Nigeria. Quantitative and qualitative approaches were used using concurrent design. The instrument for teachers and students was adapted from Employability skills for Australian small and medium sized enterprises. The teachers' questionnaire contains 50 items while students' questionnaire contains 41 items to examine the training of students at technical and vocational schools, students' competencies as well as challenges of technical and vocational education in Nigeria. Two hundred and twenty (220) teachers and two hundred and thirty three (233) students participated in the quantitative aspect. In selecting the respondents for this research, simple random sampling and purposive sampling techniques were used. The quantitative data was analyzed using descriptive and inferential statistics. T-test and Regression analyses using SPSS version 17 were used to measure the differences among the dependent and independent variables. Analysis of Moment Structure (AMOS) version 16 was also used to identify the factors that influence the Implementation of Technical and Vocational Education in Nigeria. Interviews were conducted with five principals and five heads of department in order to identify the challenges of implementation of technical and vocational education in Nigeria. Observation on infrastructural and instructional facilities was conducted in all the technical schools under the study. In the analysis for the qualitative data, content analysis was used to analyze the text recorded during the interview as well as field note. The study found employability skills, learning skills, technical skills, and teaching methods play a significant role in the training of students towards skills acquisition. No significant difference was found between the teachers in terms of importance of teaching methods. The students' level of competency was found to be low in all the aspect of skill areas. However, several factors were identified to be the factors that hinder effective implementation of technical and vocational education in Nigeria. A conceptual model on the implementation of TVE was developed based on the findings of the study.

ABSTRAK

Kajian ini dijalankan untuk mengenalpasti faktor-faktor yang mempengaruhi pelaksanaan pendidikan teknik dan vokasional di Nigeria. Pendekatan kuantitatif dan kualitatif telah digunakan. Instrumen bagi guru dan pelajar diadaptasikan dari kemahiran kebolehpasaran bagi perusahaan bersaiz sederhana dan kecil Australia. Soal selidik guru mengandungi 50 item manakala soal selidik pelajar mengandungi 41 item bagi menentukan latihan pelajar di pendidikan teknik dan vokasional, kemampuan pelajar serta cabaran pendidikan teknik dan vokasional di Nigeria. Dua ratus dua puluh (220) guru dan 233 pelajar terlibat dalam aspek kuantitatif. Dalam memilih responden bagi kajian ini, teknik pensampelan rawak mudah dan pensampelan bertujuan digunakan. Data kuantitatif dianalisis menggunakan statistik deskriptif dan inferensi. Ujian-t dan Analisis Regresi menggunakan SPSS versi 17 digunakan untuk mengukur perbezaan dalam kalangan pembolehubah bersandar dan tidak bersandar. Analisis Struktur Masa (AMOS) versi 16 juga digunakan untuk mengenalpasti faktor-faktor yang mempengaruhi pelaksanaan pendidikan teknik dan vokasional di Nigeria. Temubual dijalankan dengan lima pengetua dan lima ketua jabatan bagi mengenalpasti cabaran pelaksanaan pendidikan teknik dan vokasional di Nigeria. Pemerhatian terhadap kemudahan infrastruktur dan pengajaran dijalankan di setiap sekolah teknik yang terlibat dalam kajian. Dalam analisis data kualitatif, analisis kandungan digunakan untuk menganalisis teks yang dicatat semasa temubual, serta nota bidang. Kajian ini mendapati bahawa kemahiran kebolehpasaran, kemahiran pembelajaran, kemahiran teknik dan kaedah pengajaran memainkan peranan penting dalam latihan pelajar terhadap pencapaian kemahiran. Tidak terdapat perbezaan yang signifikan di antara guru dari segi kepentingan kaedah pengajaran. Tahap kemampuan pelajar didapati rendah dalam semua aspek bidang kemahiran. Walaubagaimanapun, beberapa faktor dikenalpasti menjadi faktor yang menghalang keberkesanan pelaksanaan pendidikan teknik dan vokasional di Nigeria. Satu model konsep terhadap pelaksanaan pendidikan teknik dan vokasional (TVE) dibangunkan berdasarkan dapatan kajian.

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LIST OF ABBREVIATIONS

GSTC, KN	-	Government Science and Technical College Kano
GTC, BGD	-	Government Technical College Bagauda
GTC, UGG	-	Government Technical College Ungogo
GTC, WDL	-	Government Technical College Wudil
GTC, KAN	-	Government Technical College Kano

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CHAPTER 1

INTRODUCTION

1.1 Introduction

Technical and vocational education (TVE) is one the most effective human resource development initiative that should be embraced by African countries in order to provide effective training and modernization of technical workforce. For the purpose of industrialization and national development, technical and vocational education provides support for economic growth, poverty eradication and wealth creation. Therefore, the training of students at various institutions of learning must be of high quality and competency based; it should also be relevant to the need of the society as well as the industry (Afeti, 2006). The main objective of technical and vocational education is to provide training to individuals in order to acquire relevant knowledge, attitudes and practical skills for the purpose of employment in a particular occupational area. One of the most significant features of TVE is its designed orientation towards training for the world of work as well as the curriculum emphasis on employable skills acquisition.

The technical and vocational education nowadays is faced with huge challenges, demands as well as opportunities for both the trainers and the trainees. The rapidly changing labor market, social disengagement and youth unemployment are the major concerns posed before most of the African countries. There is a high expectation of government and other stake holders all over the world to address multiple economic and social development issues such as poverty, food security,

unemployment etc., through technical and vocational education. In the context of chronic underemployment and unemployment, the young generations are highly in demand for education and training and also improvement of the system for relevance in the society. According to Amad, Jailani, Noraini and Zurina (2012), educational institutions should be able to provide the right knowledge and skills to the learners and also strike a balance between technical skills and humanities. For individuals to acquire self-employment they require entrepreneurship skills and employers are increasingly calling for range and level of relevant knowledge, attitude, skills and competences as well as combining technical and interpersonal skills (UNESCO, 2012).

1.1.1 Education and Skill Development

Education, skills development and technical training are central to economic and technological developments. Skills developments improve output, quality, diversity and occupational safety and improve health, thereby increase incomes and livelihood of poor. It also helps to develop social capital and strengthens knowledge about informal sector associations, rural organizations and governance (Hartl, 2009). The challenges faced in the twenty-first century which was engineered by capitalism has brought a lot of changes in work, family, community and political life of people at every region of the world, this was triggered by so many factors such as market deregulation, globalization and the need for knowledgeable skilled workers that can confront the economic, social and cultural challenges facing individual regions. While these factors poses challenges in the society, the technical and vocational education and training personnel are faced with enormous task of addressing the need of the society and workers through development, adaptation and re-addressing strategies to tackle these issues (Rojewski, 2009 & Psifidou, 2007).

According to Alam (2008), the knowledge of technical and vocational skills is the prime mover of economic and social development of any nation; therefore, investment in human capital is an investment for the future of any country. Education

and training could be regarded as a bedrock for improvement and has to be problem oriented, person centered, community centered and should be able to cater for social problems which include unemployment, crimes, poverty, health, drug abuse etc. Skill development and training is central to youth employment and enable the youths to be prepared for work in a formal and informal sector of the economy and thus play important role in employment opportunity.

Most countries in the world are faced with the challenges of improving the capacity of their workforce to respond to their own national development needs and the demands of a rapidly changing, more globally competitive world. The future success of nations, individuals, enterprises and communities increasingly depends on existence and possession of transferrable and renewable skills and knowledge. Many, both in the developed and developing countries recognize the important role that TVE plays in equipping individuals with relevant skills and knowledge, hence enabling people to effectively participate in social, economic and technological innovation processes. The globalization process, knowledge economy, advances in technology and increased competition due to liberalization are major forces driving change in the world of work. These have important implication for the demand of skills, human resource development and training (UNESCO, 2008a).

According to Netherlands Initiative for Capacity development in Higher Education (NICHE, 2010), the use of new technologies, especially ICT and the introduction of new manufacturing processes, and new modes of work organization have led to skills intensification and an increase in the demand of higher order skills and productivity. The report further states that, TVE is regarded as an instrument in creating new employment opportunities and income generating activities in the formal and informal sectors of the economy, the need of which has become more acute due to financial crisis. It also play an important role in economic development and poverty reduction if due attention is given to customizing or targeting education and training provisions to local needs. In most developing countries, TVE is limited in scale, scope, quality and relevance. The programs are not relevant to the needs of local labor market, the curricula and syllabus are outdated and the institutions lack the tools and equipment necessary for practical education. Where present, the

equipment in workshops and laboratories is often outdated, bearing little resemblance to the technologies currently used by industry. Insufficient training equipment leads to trainee overcrowding during practical demonstrations, with most of the students only observing the demonstration and not having the opportunity to get some hands-on practice. Due to the fact that the institutions are poorly resourced, the education and training remains theoretical and the graduates are not considered more skilled than their academic counterparts by the labor market. The institutions thereby acquire a poor image, and produce graduates with lower employability.

During the International Labor Conference, at its 88th session in 2000, defines employability skills as the collection of knowledge, skills and competencies that enhance the ability of the worker to secure and retain a job as well as cope with the labor market more easily at various stages of life cycle. The “resolution concerning human resources training and development” clarifies the fact that individuals easily got employable when they acquire broad-based education and training, teamwork, problem solving, information and communication technology (ICT), basic and high-level skills, communication and language skills. In addition to that, social and interpersonal skills, literacy and numeracy as well as learning skills are also very essential. Moreover, such skills enables individual to adapt to various changes in the work place due to dynamics of world of work today which paves way for further training and re-training. Clearly, there are great advantages to acquiring a broad range of core skills at a young age (David, 2008).

Employability skills are set of skills which help in supporting the ability of an individual to perform effectively in the workplace. It is non-technical skills and sometimes called ‘transferable skills’ or ‘soft skills’ or ‘generic skills’. The employability skills comprises of basic skills, thinking skills, resource skills, information skills, interpersonal skills, system & technology skills and personal qualities (Clarke, 2007). Employability skills become an integral part of the career and technical curriculum by engaging students in project- and inquiry-based learning, internships, school-based enterprises, and career and technical student organization activities. By working directly with business and industry to design the curricula and projects used in classrooms, and by offering students at the secondary and

postsecondary levels the opportunity to gain industry-based certifications and/or dual credit in a wide range of career fields such as engineering, computer science, health care, and business management, Career and Technical Education (CTE) programs benefit both students and their future employers (Institute for a Competitive Workforce, 2008).

1.1.2 TVE and National Policy on Education in Nigeria

Technical and vocational education is described as the training of individuals for the implementation of technological development of a nation by providing the citizens with the right skills necessary for employment. The contributions of technical and vocational education in any country in the world today is enormous, hence it plays a very significant role on the national welfare. The program enlisted among others ranging from welding and fabrication, mechanical/automobile technology, electrical/electronic technology, woodwork and building technology etc. Technical and vocational education serves as a catalyst for economic, social and political changes of a nation due to its uniqueness in nature (Uwaifo, 2010).

In Nigeria, “technical and vocational education at secondary school level is designed to prepare individuals with the knowledge and skills for the purpose of earning a living (employable, self- employed or an employer of labour)” (Onyene, Olusanya, Salisu & Johnson 2007:5). In support of this statement, the national policy on education states that:

“technical and vocational education 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 the economic and social life” (NPE, 2004:29).

The policy further states that, the goals of technical and vocational education shall be:

- i. to provide trained manpower in the applied science and business particularly at craft, advanced craft and technical levels;
- ii. to provide the technical and vocational skills necessary for agricultural, commercial and economic development;
- iii. to give training and impart necessary skills to individual who shall be self-reliant economically (NPE, 2004:30).

In pursuance of the stated goals, the national policy on education further states that: ‘the trainees completing technical college programs shall have three options’:

- i. Secure employment at the end of the whole course or after completing one or two modules of employable skills.
- ii. Set up their own business and become self-employed and be able to employ others;
- iii. Pursue further education in advance craft/technical program and in post –secondary (tertiary) technical institutions such as science and technical colleges, polytechnics or colleges of education (technical) and universities” (NPE, 2004:31).

Technical and vocational education system in Nigeria is designed to produce competent craftsmen for the different sector of the economy who are expected after graduation to be able to test, diagnose, service and carryout repairs as specified in the national curriculum which was adopted by all technical colleges across the country and accredited by National Board for Technical Education (Olayinka and Oyenuga, 2010). The rapid growth of changes in industrial sector has brought a lot of challenges and competition in the world’s economy in the area of technology, marketing, information technology, services and manufacturing. Workers in these areas are expected to be highly knowledgeable in terms of “hard “technical skills and “soft” generic skills in order to maintain and serve the needs of the society and

industry (Wan-Mohammed and Yunus, 2009). It is obvious to acknowledge that in many technical and vocational education professions, the central focus of training is on technical skills in various fields of study and related career of the students, but the global market of today is demanding more in various technical professions such as engineering, architecture, information technology and research and development. The more soft skills are integrated in technical and vocational education programs, the more they become relevant and successful in the highly competitive global economy (Bancino and Zevalkink, 2007).

1.1.3 Skills Gap and Curriculum in TVE

The wide gap of skills possessed by the technical and vocational education students and the industries is a major concern by educators and business leaders nowadays. Employers are continually expressing their worry over the current trend of jobs seekers whom do not possess the relevant skills needed from them to be employed. Teachers who participated in the training of such students and prepare them for employment have a very big challenge ahead of them, since the world we live in is a 'flattered' one with high degree of competition and therefore educators must make sure that students are given all the necessary foundational skills at all level of their developmental stages so that they can build on their future (Ferguson, 2007).

David (2008) opined that many young people nowadays are faced with serious constraints of acquiring quality education and training that can make them productive and also earn them decent jobs in the saturated labor market. Those that might be affected include school dropouts, less privileged who are excluded from education opportunities, illiterates and ill-equipped graduates of technical and vocational education. In industrialized nations, technical and vocational education has been placed a priority as it has become an integral part of national development strategy because of the role it plays on productivity and economic development, it is also directed towards skill acquisition and knowledge for gainful employment and

livelihood. Post-primary schools in developed countries prepare their students for the world of work through technical and vocational education, since the global economy which is 'knowledge driven' now requires more than the provision of job skills and academic knowledge but it also require creative and critical minds, problem solving and trained responsible citizens (Dike, 2009a).

Important changes are taking place in the lives of individuals worldwide as a result of changes in development and the use of sophisticated technology compared to past years. One aspect that helps in the improvement of the economy as well as promoting products effectively and efficiently to the world market of today is the information and communications technology. It is therefore important to train students in the area of information processes, use of control system and computers in order to produce highly skilled workforce so as to handle the new technologies. Malaysia, Singapore, Korea and Taiwan are one of the industrialized countries in Asia region. For the support of the industrial sector, Malaysia needs skilled personnel that can handle the demand and requirement of the industries and work for the purpose of keeping vision 2020. In order to fulfill this need, the government has provided about 194 technical and vocational institutions in the country with the hope of increasing the number during next plan (Ab.Rahim and Ivan, 2007).

In order to keep the pace with political, socio-economic and technological developments in any society, there are necessary elements of changes that have to occur in the educational systems from time to time. One aspect of the educational change is attached to the curriculum in which the teaching and learning process must be directed towards society and individuals. The curriculum of a country serves like a national constitution and should prepare the citizens to be useful and productive. (Rout, Prisyadarshani, Hussin, Pritinada, Wan Mamat and Zea, 2010). Curriculum delivery in the teaching and learning was recognized by Van Tassel-Baska and Stambough (2008) as a process that require a very careful selection of materials and models over time in which the students are likely to comprehend and digest the processes inherent to each model so that their thinking can be directed towards positive ideas automatically and also be able to transfer new learning situations with ease.

Currently, the focus and process of education is too mechanistic, using the lecture method which do not promote or encourage entrepreneurial behavior. A considerable challenge faces educators and trainers to derive programs which are appropriate for preparing graduates for the outside world. Entrepreneurship should be taught to students in all disciplines in the institution. It is not out of place to say that many business ideas emerge from non-business disciplines but are often waved aside or ignored because students are not sufficiently educated in the knowledge and skills required. Entrepreneurial programs if properly planned and executed will ensure that the issue of self-employment and job creation will increase. Nigerian education is presently at a crossroad as far as producing individuals who will work to deserve and justify their pay, work independently, globally and bring creativity into their work place. The current mismatch between Nigerian economy needs and what Nigerian youths are made to study in schools is becoming very appalling (Akpomi, 2009).

To this end, entrepreneurship education focuses on developing understanding and capacity for pursuit of entrepreneurial behaviors, skills and attributes in widely different contexts. It can be portrayed as open to all and not exclusively the domain of the high-flying growth-seeking business person. The propensity to behave entrepreneurially is not exclusive to certain individuals. Different individuals will have a different mix of capabilities for demonstrating and acquiring entrepreneurial behaviors, skills and attributes. These behaviors can be practiced, developed and learned; hence it is important to expose all students to entrepreneurship education. Meanwhile globalization, the rapid development of technology and the lower cost of travel have completely changed the nature of work. It is no longer enough to train students for a career. Schools must prepare students to work in a dynamic, rapidly changing entrepreneurial and global environment. In the past several decades, entrepreneurial dynamism has been evident both in of the educational institutions in the world. In most of the developed countries, 90% and 100% of vocational education students at some point enroll in entrepreneurship programs during their vocational training (European Commission Report, 2009).

1.2 Background of the Problem

Technical and vocational education has been an integral part of National development in many countries, its contributions to economic development and productivity is highly significant in terms of employment and business. Youth's employment plays an important role in building life skills in young people and also supports communities and families (Mujumdar and Khambayat, 2010). The youths of any country represent the future and hope of the nation, therefore, their potentialities must be harnessed through sound education. The British education system had a great influence over Nigeria's education system which has been in practice for decades, this type of education neglects vocational and cultural interest of the country. The common type of vocational education inherited by our forefathers was the apprenticeship system of education which provided the youths with employment and learnt specific skills/trades with the use of hand. The establishment of technical schools and trade centers as formal institutions in Nigeria were basically predicted to teach skills and also mastery of the use of hand in order to train individuals to acquire knowledge and skills for employment. It is also designed to meet the employment needs of the economy which include industry but unfortunately, it is noted that preparation of workers in today's industries in Nigeria is not effective (Uwaifo, 2009). The utilization and allocation of skills in a dynamic, expanding economy are fundamentally different from macroeconomic situations in which there is no growth, and coupled with poor governance in Nigeria. While for example in South Korea and China, there has been employment for TVE graduates of almost all institutions (Department for International Development [DFID], 2007).

1.2.1 Secondary Education System in Nigeria

The evolution of education in Nigeria has continued to grow over the years. At post-primary school level, this evolution has resulted in to a 3-3 system that was designed for three years at junior secondary school and three years also at senior secondary school. Several efforts were made towards improving Nigeria's education

system as well as the national policy on education in the area of access, quality of teaching, technical and vocational education etc, but still several problems remained unanswered. According to UNESCO (2005), post-primary education must be reformed so as to pave way for young people to interact, be responsible citizens, productive, well equipped for life and be able to participate in today's knowledge based technology society. The reformation in Nigeria has to focus in the area of improving the attitudes of the students towards technical and vocational education. It must also continue to offer educational services that are relevant to individuals and societal needs as well as the national needs. The reform must also continue to recognize the teacher development program in order to retool and improve the current teaching techniques adopted by the teachers. In a global community nowadays, education has moved away from rote learning to possession of factual knowledge, drill, critical thinking and problem-solving, the focus has also changed from arts and humanities to that of science, technology and mathematics. It has also shifted from teacher as a chief convener of knowledge to coach and facilitator, and such access has to be encouraged continuously for all. But educational system in Nigeria has been witnessing a one step forward and two step backward matches towards policy and implementation processes (Etim, 2007).

For Nigeria to achieve its goals in national policy on education, it must establish and rehabilitate technical and vocational institutions, since the country lacks quality personnel in the sector (Oni, 2007). Uwaifo and Uwaifo (2009) stated that, the way and manner training is conducted in technical and vocational education in Nigeria is not very much impressive over the years. There is a growing concern by individual, government and society over the training of TVE teachers in the country, since teachers play a very significant role in both the communities, schools and development of the nation's economy, therefore the quality of teacher today reflects the behavior of its people tomorrow. Hence, there is need to groom the TVE teachers in order to acquire enough knowledge and skills for the global and industrial challenges.

Uwaifo (2010) observed that, societal problems are expected to be solved by technology in sustainable ways through a sufficient knowledge of technical and vocational education in terms of concepts and application of theoretical principles in

order to solve practical problems. This challenge has been facing Nigeria over decades for its inability to this task which has characterized the country as a low level nation in terms of technology and also classified as developing nation. This has been in connection with attitude of government towards funding TVE schools which was not satisfactory and the negative attitude accorded by government officials towards the program. This has caused for the closure of the program at various institutions of learning. The ill-equipped program has resulted in producing insufficient trained personnel and ill-equipped technical and vocational education graduates. He further states that, the curriculum of technical and vocational education is based on foreign model which cannot easily be duplicated in developing country like Nigeria. Shortage of competent supporting staff, lack of basic textbooks that could illustrate local examples for better understanding of the students and the overloading of the curricula which is more academic with purely science and mathematics contents instead of basic engineering and technology. This results in inadequate preparation of students with business and entrepreneurship concepts and skills. The teaching methods adopted by the teachers in transferring the knowledge are so conventional where teachers only read out for students to take notes.

Adebesin (2006) in his work on in-depth review of the present state and focus of technical and vocational education in Nigeria mentioned that the educational system has continued to produce more of individuals who lack job skills and attitudes for employment than those that the economy requires to remain vibrant.

On April 2, 2009, the honorable minister of education at an official ceremony in Abuja delivered an address titled “Nigeria: Education Roadmap” and states that:

“TVET is to be a top priority of his education agenda because of its importance to the realization of vision 2020. Nigeria’s ability to realize its vision of becoming one of the 20 top economies of the world by the year 2020 is largely dependent on its capacity to transform its population into highly skilled and competent individuals. Many advanced economies place a great emphasis on the knowledge and acquisition of technical and vocational skills. Unfortunately our society places a stigma on this type of education, showing a preference for academic track disciplines. Now we are at the point where we are importing labor from all over the world because we do not have Nigerians with the adequate skills to meet the demands of the labor

market, such as good artisans". (Vanguard Newspaper, Thursday, 02 April, 2009).

Olorunfemi and Ashaolu (2008) postulated that, most of the industries in Nigeria have expressed their concern over the quality of engineering graduates in terms of having low practical knowledge; lack of skills required for the current technological edge and also lack confidence in the discharge of their duties. This has forced the industries to design several re-training programs in order for the graduates to be employable due to the poor quality of training they received from their various institutions of learning. Human resource development is the bed rock of economic development of any nation more especially in the area of science and engineering for the purpose of industrialization and technological advancement. Industrial growth in Nigeria is relatively very poor despite the huge number of graduates of engineering produced day in day out from various departments of engineering and technology at all level of education, however, it is only about 10% of these graduates are able to be employed annually.

Oloruntegbe, Agbayewa, Adodo, Adare and Laleye (2010) observed that, the wide gap created between the need of the industry and that of the society was so wide and call for the re-structuring the curriculum in order to match with the needs of the industry and that of the society, hence it was observed that most of the technical and vocational education curricula and facilities in Africa were established by the colonial masters. Other factors affecting the quality of graduates in TVE include poor foundation laid right from junior secondary school levels with non-flexible curricula, non-availability of equipment and facilities, over populated classrooms and lack of practical teaching tools as well as incompetent teachers. The method of teaching in our institutions of learning is based on instinctive with emphasis on memories idea and insight and also with much more common features of theoretical approach. In developed countries, multi-national companies usually partake in the training, curriculum development and even funding the institutions of learning, but in Nigeria, there is little or no input in educational sector from such multi-nationals in the country.

1.2.2 Status of Technical and Vocational Education across the Globe

Institute for a Competitive Workforce (2008) reported that, career and technical education (CTE), formerly known as vocational or skilled trades education, presents the business community with an actionable agenda for solving growing workforce shortages in the United States. The term is used to identify the programs that are designed for acquisition of job skills and related academic education in order to enable the graduates' entry into the labor market immediately after graduation from high school. In a well-designed models of CTE—models that integrate rigorous academics with relevance, project-based learning drawn from the real world of work—students have lower dropout rates, higher test scores, higher graduation rates, higher postsecondary enrollment rates, and higher earnings than students who do not enroll in CTE offerings. At its best, CTE connects challenging technical courses with demanding academics, preparing students for a range of careers. This type of crosscutting, integrated design creates multiple pathways for students to explore and pursue after high school, allowing them realistic opportunities to go on to either a two- or four-year educational institution (or both) or to enter the job market with a wide range of in-demand skills already in hand.

For the purpose of preparing the students for labor market, nearly all the high schools operating in the United States offer introductory courses such as technology education, introduction to computers, word processing etc. About 75% of the students of high schools in the US today offer one or more specialized courses/programs for labor market preparation such as technical and communication, health occupation, business and marketing, agriculture, trade and industrial education, child care etc. The country's workforce today is having less than 20% of unskilled workers (Lynch, 2009).

In Malaysia, the government policy has been pro-active and skills are used as vehicle to help the economy move up the value chain, ensuring that it adopts a high skilled route to development. Within public policy for skills the emphasis appears to be shifting towards a market based and stakeholder driven system. This help to ensure that resources are used in a more cost effective manner and ensure that provision is more responsive to stakeholders need. At the same-time government

has not forgotten the social dimension and continues to provide opportunities for those who have dropped out of the system or who are unable to find work (ILO, 2010).

Singapore has a unique model which demonstrates the importance of ensuring skill strategies are linked to identify economic goals and their future needs. In Singapore, importance is also attached to the workplace as a means of supporting skill development and the significance given to identifying future skill requirements. However, it is important to realize that a strong emphasis was given to developing the education base prior to supporting skills, especially with regard to producing young people with strong intermediate level skills (Seng, 2012).

In China for instance, there is still an extensive system of vocational institutions and different types of skills programs supported by the government. Central to the different models of provision is the country's vocational qualification and skill assessment system. There are five of the following levels: junior, intermediate, senior, technician and senior technician grades. However, out of 70 million skilled workers in China, 96 % are in the junior and intermediate grades. When it comes to training institutions the major providers consist of technical schools, vocational schools and technical secondary schools, all of which are supported by Employment Training Centers. These institutions are formal in every region and municipal city in China, providing various types of social training for the unemployed, many of whom are either retrained or new entrants to the labor force. There are estimated to be around 17 000 such institutions across China. Besides the training institutions, China has an extensive range of training programs for pre-employment, on-the-job and support for those between jobs (i.e. retraining). The government has also implemented a program called Preparation Training for Youth (Hao, 2010).

The China's government active labor market strategies recognize the need to move people into growth sectors and the importance of employability skills, including entrepreneurship and skills upgrading. A number of initiatives are being implemented to encourage the development of employability skills, including sending 3000 workers to schools across China to provide demand-related skill

training to around 2.2 million workers. This provides young people with the opportunity to participate in an internship program and gain industrial experience and an understanding of how businesses operate. This scheme is very flexible and enables young people to study vocational subjects on a part-time or full-time basis, as well as through distance learning. Like Singapore, Hong Kong has achieved high growth rates using an export-led growth strategy. Hong Kong covers a small geographical area and economic success has partly been based on developing the skills and competencies of its people. The largest provider of skills in Hong Kong is the Vocational Training Council (VTC). The VTC is a tripartite body representing the interests of employers, employees and academics. The focus is on pre-employment training and programs of study lead to emphasis on developing practical competencies, with 70% of the time spent on practical activities and the remainder 30% on theory. An estimated 160 000 young people graduate from the VTC each year. In the past emphasis has been given to pre-employment training, but in response to the changing demographic trends, courses are being developed for older people in employment (Martinez-Fernandez and Powell, 2009).

It is evident that the policy makers in Nigeria have failed to handle the quest for the development and industrialization effectively as they neglect technical and vocational education, human capital development and skill acquisition at all levels of education. The ineffectiveness of technical and vocational institutions has failed to enable the graduates to gain employment and at the same time failed to secure admission into higher institution of learning (Dike, 2009b). Despite the academic and vocational skills that is provided to the students of technical and vocational graduates in Nigeria at both junior and senior secondary school levels, most of the graduates could not further their studies and stay without job (Bello, Danjuma and Adamu, 2007).

Nigeria as a nation that aspire to develop technologically and provide employment to its citizens, it is now the right time to inculcate into our youths the culture and attitude of technical and vocational skills through proper implementation of TVE (Olaniyan and Ojo, 2008). Implementation of technical and vocational education in this area requires a holistic approach that takes into consideration the curriculum content, teaching method, teaching materials, machinery and equipment

as well as industrial participation with emphasis of digging down into the basics of TVE which has suffered from a focus on the basic at post-primary level in Nigeria.

1.3 Statement of the Problem

The implementation of Technical and Vocational Education implies change for many groups of professionals including teachers, administrators, curriculum planners and other individual's charged with implementing educational policy. Despite government efforts to increase the number of Technical and Vocational schools as well as encouraging skill-based training in TVE, Nigeria is still backwards in terms of technological advancement (Adeyemi, 2008).

Similarly, the National policy on Education (2004:31) provided that the trainees of Technical and Vocational program shall have three options, in which two of the three options are to:

- i. Secure employment either at the end of one or two modules of the whole course or after completing one or two modules of employable skills.
- ii. Set-up their own business and become self- employed and be able to employ others.

However, the existing industries in Nigeria are not fully satisfied with the quality of TVE graduates in terms of technical skills and at the same time the graduates lack competence of being self-employed due to improper implementation of TVE curriculum (Adebesin, 2006; Olorunfemi and Ashaolu, 2008; Oloruntegbe, Agbayewa, Adodo, Adare and Laleye, 2010).

1.4 Objectives

The main objective of the study is:

1. To examine the influence of teaching approaches on skill acquisition by the teachers towards the implementation of TVE in Nigeria.
2. To determine whether teaching approaches differ among the teachers in terms of schools and gender.
3. (a) To examine the level of importance and competencies among students in terms of technical, entrepreneurship and employability skills.

(b) To examine the levels of importance and competencies among students in terms of schools and age.
4. To examine the level of influence of skills elements in terms of teaching methods, entrepreneurship skills, technical skills, learning skills, and employability skills among teachers towards implementation of technical and vocational education in Nigeria
5. To explore the challenges facing technical and vocational education in terms of implementation of the curriculum.
6. To develop a conceptual model on the implementation of technical and vocational education in Nigeria.

1.5 Research Questions

The researcher developed the following research question:

Research Question 1. What are the teaching approaches considered to be important by the teachers towards skill acquisition among students?

- (a) Do teaching approaches influence technical skills among students?
- (b) Do the teaching approaches influence entrepreneurship skills among students?
- (c) Do the teaching approaches influence employability skills among students?

Research Question 2. What are differences in teaching approaches in terms of teachers' gender and schools?

- (a) Do the teaching approaches differ among the teachers in terms of gender?
- (b) Do the teaching approaches differ among the teachers in schools?

Research Question 3. What are the competencies possessed by students of technical and vocational education in Nigeria?

- (a) What are the level of competencies among students in terms of technical, entrepreneurship and employability skills?
- (b) Do the importance of skills and competencies differ among the schools and age of the students?

Research Question 4. What are the levels of influence of skills elements in terms of teaching methods, entrepreneurship skills, technical skills, learning skills, and employability skills among teachers towards implementation of technical and vocational education in Nigeria?

Research Question 5. What are the challenges of TVE teachers in terms of implementation of Technical and Vocational Education in Nigeria?

1.6 Significance of the Study

The importance of this study can be justified on the basis of Nigeria's quest to achieve her dream vision of 2020 and its current move towards a developed nation as stated in the report of the steering committee of the National Board for Technical Education (NBTE), (2011). The country has emerged with national objective on technical and vocational education which is expected to be realized. This include: acquisition of vocational and technical skills, exposing students to various careers for useful options, providing the youths with conducive atmosphere to have full understanding of the current technological complexities as well as stimulate creativity among the students. Nigeria's desire in achieving her national goals was based on sound education and training. The need for effective training and acquisition of appropriate skills, competence and abilities both physical and mental will contribute to the development of the society, thus, no society could develop to an appreciable point without functional technological foundation in technical and vocational education. Therefore, the need for proper attention to technical and vocational education cannot be over emphasized in the Nigerian educational system. The findings of this study will be useful to:

1. Kano State Ministry of Education in planning the curriculum and orienting students at junior secondary level by exposing them to technical courses and appreciate such programs for self-employment and national development.
2. Science and Technical Schools Board, Kano-sate in order to enhance the teaching and learning of technical courses for effective training.
3. Federal Ministry of Education for proper co-ordination of the curriculum in terms of societal needs and industrial collaboration for the effective training of the students.
4. It will also be useful to curriculum planners in technical and vocational education in planning the curriculum that will help in providing the right skills needed for the industry and also for employment.
5. The study will benefit TVE teachers in the area of teaching methods and identifying employability skills components that are deemed necessary for industry.

6. The study will be beneficial to parents in creating awareness about the importance of technical and vocational education.
7. It will also be significant to students in gaining better understanding of the skills that is expected of them for self-reliant and industry.

The study covered all the Technical and Vocational Schools in Kano State which comprises of Government Technical College Kofar-Nassarawa, Government Technical College Ungoggo, and Government Technical College Wudil, Government Technical College Bagauda, Girls Science and Technical College Kano as well as some secondary schools offering technical subjects. The study covered both the teachers and students of mechanical, automobile, electrical, and electronic departments of all the technical schools using both quantitative and qualitative approach. It also examined the curriculum content in terms of skills elements provided, teaching methods, challenges of TVE in terms facilities, infrastructure, teaching materials, and students' level of competence on technical skills, employability skills as well as entrepreneurship skills.

1.7 Conceptual Framework

The investment made in people in order to enhance their productivity in their jobs is referred to as human capital. Human capital could be referred to as human beings who acquire attitudes, knowledge and skills that are used in the production process. It is widely believed that human capital is the most vital factor of production and also the most important catalyst for development and economic growth. It also remains the coordinates to other factors of production towards producing goods and services for human consumption. In 1959, just a year before Nigeria gains its independence in 1960 from the British government, the Federal Government of Nigeria set up a commission called Ashby Commission. The commission was mandated to investigate and come up with the needs of the country in the area of post-primary and tertiary education. Since then, the recommendation given was to give proper attention towards human capital development through government

programs for the attainment of national development. Developed countries in the world that emerged sustainable development have given more priority towards human resources development. No matter how available resources a country has, it could not achieve its full scale development without skilled personnel that could transform the resources into a useful product. Therefore, such technical innovations came into being due to human capital development (Alani and Isola, 2009).

The major factor responsible for economic prosperity and national development rely basically on human capital stock. Researches have been conducted on human capital in the area of economic aspect, factors that affect the enhancement of skills and talents are continuously emerging in social and behavioral research. According to the studies conducted by Sakamoto and Powers (1995), Schultz (1971) and Psacharopoulos and Woodhall (1997), human capital laid the assumption that, the major instrument that resulted in an improved and effective production capacity of individuals is education. It is argued by human capital theorists that an educated society is a productive society. The theory make emphasis on how education transformed the efficiency and productivity of the workers in a positive direction as a result of investment accorded to human beings. The proponents of human capital theory have considered the productive investment in human capital through formal education as equal or even worthwhile than the physical capital.

Babalola (2003) reported that, the idea behind investing in human capital could be stated on three reasons:

- i. New generation of people ought to be given the right knowledge and skills by the previous generations for the purpose of development.
- ii. The current new generations should be trained on how existing knowledge could be used to transform the economy by developing new products, introducing new processes and creating new production methods and other social services.
- iii. The youths must be encouraged to develop new methods, processes and ideas through creativity for self-reliant.

Fagerlind and Saha, (1997) also reported that human capital theory provides to a large extent the justification for expenditure on education in both developed and

developing countries of the world. The theory promotes investment in human capital and resulted in rapid economic growth of societies. Such investment has provided economic success and achievements for individuals. Most economists believed that the determinant pace and character of economic and social development of any nation lies on its human resources, not its material and capital resources. It is a type of training that provides individuals with managerial skills, labor skills and entrepreneurial skills.

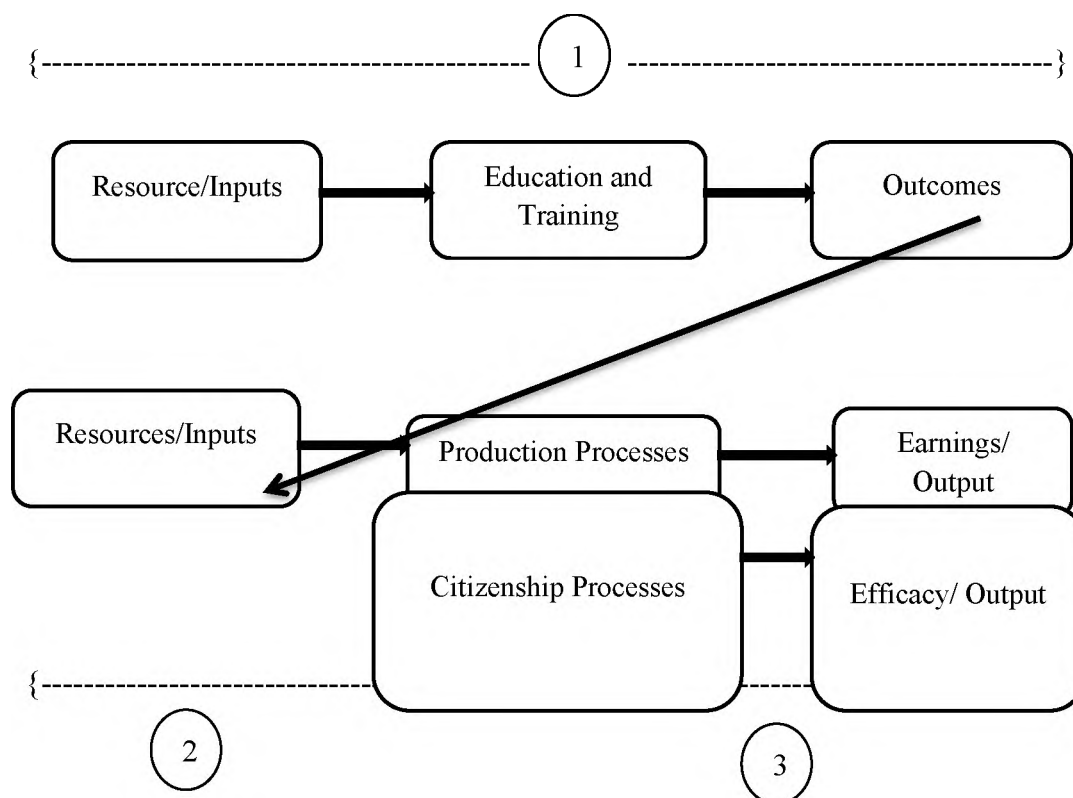


Figure 1.1: A Model of Human Capital Theory

Source: Swanson (2001) in Marimuthu, M., Arokiasamy, L., and Ismail, M. (2009)

Figure 1.1 shows the relationship 1 which is representing the concept of production functions as it relate to education and training. The main focus here is on the investment in education and training which results in increased learning among individuals. The number 2 relationship is representing human capital between the learning and increased productivity among learners. The main assumption of this relation is that increased learning results in increased productivity. The number 3

relationship is basically representing human capital; it focuses on the relationship between increased productivity and increased wages and earnings of the workers. Therefore, the main assumption here is that higher the productivity results in higher wages and earnings for individuals and businesses. Thus, this study uses human capital theory to develop the conceptual framework for this study.

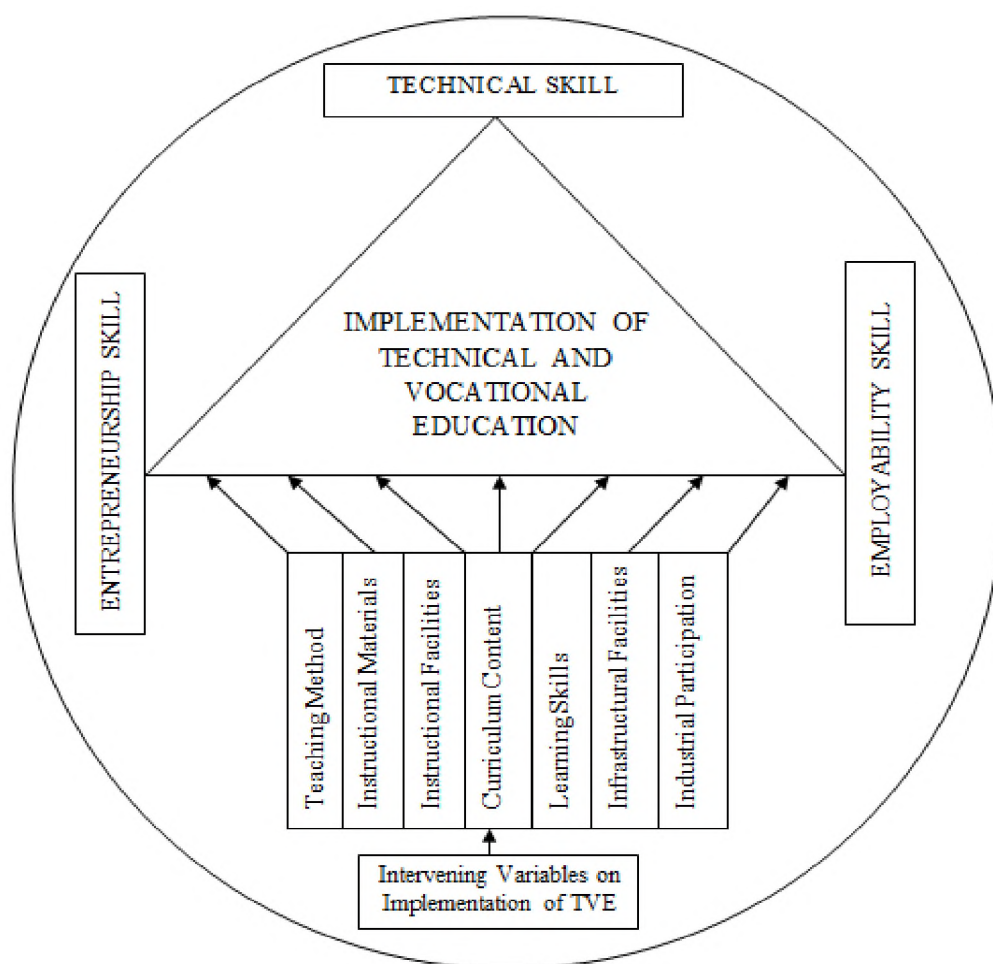


Figure 1.2: Conceptual Framework

Sources: Dorothy, Ngozi, Blessing and Micheal (2009); Wan-Mohammed and Yunus (2009); UNESCO (2007); Uwaifo (2010)

The conceptual framework in Figure 1.2 of the present study was developed by the researcher to establish the relationship between the human capital theory and

the training of young generations towards the acquisition appropriate knowledge and skills for economic and national development. In the National Policy on Education (2004), the national goals on education is aimed at providing citizens with appropriate skills and the development of mental, physical and social abilities and competencies as equipment for individual to live in and contribute to the development of the society. It also aimed at training of individuals for acquisition of competencies necessary for self-reliant. Therefore, the implementation of technical and vocational education in Nigeria is the main concept of this study towards investigating the methods and procedures employed by technical and vocational schools in the training of young generations in Nigeria. The focus is on the training of youths through various teaching methods, technical skills, employability skills, entrepreneurship skills, learning skills, curriculum content, infrastructural facilities, instructional facilities, instructional materials and industrial participation for the students to acquire skills for self-employment and become economically empowered leading to national development and economic growth. The framework shows the implementation of TVE as an independent variable, teaching methods, instructional and infrastructural facilities, teaching materials, machines and equipment, as well as learning skills as intervening variables while technical skills, entrepreneurship skills and employability skills are the dependent variables. The background study for the conceptual framework on skills for employment growth and development for this study examines the centrality of skill development to achieve greater productivity and employment growth. Quality technical and vocational education provides a strategic link to higher productivity, employment and development. What is particularly important to note for the purpose of this study is that productivity at individual level is affected by such factors as education, training, core skills and experience. Absence of relevant and affordable training programs impedes skills development and employability. Thus, the road to more productive employment is impaired.

1.8 Scope of the Study

The study covered five Technical Schools in Kano State that offer courses in Mechanical, Automobile, Electrical and Electronic technology, this comprises of Government Technical College Kofar-Nassarawa, Government Technical College Ungoggo, Government Technical College Wudil, Government Technical College Bagauda as well as Girls Science and Technical College Kano all in Kano State-Nigeria. It also covered the teachers, students and administrators of the colleges using quantitative and qualitative approach, whereby quantitative will be used for teachers and students as well as qualitative for administrators and teachers. The study also examined the curriculum content in terms skills elements provided, employability skills possessed by the students, teaching methods for the teaching of theory and practical, challenges of TVE as well as training and infrastructural facilities.

1.9 Definition of Terms

1.9.1 Implementation

School (2006) refers to implementation as putting into effect a plan already mapped out. In this study, it means process involved in translating educational plan into action to bring about change in the learner as they acquire the planned experiences, skills and knowledge that are aimed at enabling the learner function effectively in the society. In this regard, implementation is seen as both the means and the means to an end.

1.9.2 Technical and Vocational Education.

Technical and Vocational Education is used as a comprehensive term referring to those aspect 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.

- a- an integral part of general education;
- b- A means of preparing for occupational fields and for effective participation in the world of work;
- c- An aspect of lifelong learning and preparation for responsible citizenship;
- d- An instrument for promoting environmentally sound sustainable development;
- e- A method of facilitating poverty alleviation (UNESCO, 2005:7).

1.9.3 Curriculum

According to Parkey, Anctil and Glen (2006) defines Curriculum as all the educative experiences learners have in an educational program, the purpose of which to achieve broad goals and related specific objectives that have been developed within a framework of theory and research, past and present professional practice, and changing needs of the society.

1.9.4 Skill Subjects

Skill subjects used in this study are those practically-oriented subjects that are designed to teach students skills which will empower them with job creation and self-reliance (Aina, 2009). The subjects in this category fall under the vocational and technical field. Skill-based means the same as practical-based and they are used interchangeably in this study. For the purpose of this study, subjects in the vocational field include Metalwork, Auto-Mechanics Electrical and Electronics.

1.9.5 Employability Skills

The International Labor Congress (ILC) at its 88th session in year 2000 defined employability skills as the combination of knowledge, skills and competence a worker should possess in order to obtain and retain job. The employability skills considered by the congress for worker to be employable are basic and portable high-level skills, broad-based education and training, teamwork, problem solving, communication and language skills Information and communication technology (ICT), (ILO, 2008).

1.9.6 Entrepreneurial Skills

Wilson (2008) defines entrepreneurship as skills that enables individual create employment or start up business. Entrepreneurship education provides a mix of experiential learning, skill building and most importantly, mindset shift. Certainly, the earlier and more widespread the exposure to entrepreneurship and innovation, the more likely it is that students will consider entrepreneurial careers at some point in the future.

1.9.7 Learning Skills

Learning skills is an ability of the learner to learn new process, access, manage, organize and ask questions in order to have productive study skills by using appropriate learning tools and strategies. This could also be related to the ability to learn independently and develop attitude to learn. It is also related to the skills on where and how to get information from available sources and also be able to manage and organize the information effectively (Partners for 21st Century Skills, 2009).

1.9.8 Teaching Methods

Teaching method could be referred to as the adaptation of ways and means of guiding students through the activities of learning for the purpose of accomplishing the desired goals. The selection of good teaching method by the teacher in a particular situation enables the teacher to achieve specific goals towards the set activities (Kennedy, 2011).

1.9.9 Human Capital Theory

Human capital theory is a type of theory that focuses on education and training of individuals in order to raise the productivity of an employee by imparting useful skills, knowledge, values, abilities and social assets towards raising employees' income thereby increasing their hopes in their socio-economic well-being (Xiao, 2001).

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