

**AN ASSESSMENT OF THE FACTORS AFFECTING IMPLEMENTATION OF
VOCATIONAL TECHNICAL EDUCATION PROGRAMMES IN HIGHER INSTITUTIONS IN
DELTA STATE, NIGERIA**

By

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Declaration

This work has not previously been accepted in substance for any degree and is not being concurrently submitted in candidature for any degree.

This thesis is the result of my own investigations, except where otherwise stated.

Other sources are acknowledged by references. A reference list is appended.

Signed:  (Candidate)

Date: 21/05/2021

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Thesis Acronyms

AIK – African Indigenous Knowledge

CE – Career Education

CIVTE - Central Institute for Vocational and Technical Education, Ministry of Education

CONIF - National Council for the Federal Network of Vocational Institutions

CTE – Career and Technical Education

DTVET - Directorate of Technical and Vocational Education and Training

GS – General Studies

HE – Higher Education

HEI – Higher Education Institution

HES – Higher Education System

NBTE - National Board for Technical Education

ICT Information Communication Technology

NGOs – Non-Governmental Organisations

NPE – National Policy on Education

NVIVO – Qualitative Data Analysis Computer Software

PSSCIVE - Pandit Sunderlal Sharma Central Institute of Vocational Education

TETFUND – Tertiary Education Trust Fund

TVE – Technical and Vocational Education

TVET – Technical Vocational Education and Training

UNESCO – United Nations Educational, Scientific and Cultural Organization

UNEVOC - International Centre for Technical and Vocational Education and Training

VE – Vocational Education

VET – Vocational Education and Training

VTE – Vocational Technical Education

VTIs – Vocational Technical Institutions

Abstract

The study investigates the stakeholders' views on factors affecting effective implementation of the Vocational Technical Education (VTE) programme in Delta State, Nigeria. The purpose of the VTE programme is to equip its recipients with knowledge and skills needed to function in the world of work to meet the needs of society. Literature has indicated a gap between the skills possessed by VTE graduates and those needed in the labour market, which is affecting the graduates' service delivery. The study is therefore conducted to see how VTE trainees should be equipped with the skills required in the labour market, thereby bridging the existing skill gap.

Mixed methods research was adopted in the investigation of the study. Interviews and questionnaires were used as instruments for data collection. The data collected from the 74 respondents of the study were thematically analysed using NVIVO. The findings reveal the factors affecting the delivery of the programme to include inadequate facilities, insufficient funds, poor planning and implementation, misconception, inadequate curriculum, inadequate training and retraining of instructors, misconception of the programme by the members of the society and low enrolment. The factors were perceived by the respondents of the study to be affecting the performance of the graduates of the programme.

The study concluded with a suggested adoption of the integration of the practical training of the trainees in the industries with their theoretical training in their various institutions, diversification of sources of funding, involvement of stakeholders in the monitoring and supervision of the programme implementation, proposed designed model for effective delivery of the programme, and proposed extension of Prosser's Sixteen Theorems to support the delivery of effective vocational technical education programmes.

Key words: Stakeholders, resources, VTE trainees and labour market, acquisition of knowledge and skills, vocational technical education

Chapter One

1.0 Introduction

1.1 Background and Context of the Study

Vocational Technical Education (VTE) is a kind of education that prepares recipients with necessary skills for work in each vocation; it equips them with the theoretical and practical knowledge that is needed to function effectively and efficiently in a chosen field of interest (Okoye and Arimonu 2016). VTE is a form of educational provision with a wide variety of courses and programmes for different kinds of people, irrespective of their sex, to prepare them for a functional life. It is a liberal education programme that has a place for those who are highly gifted and talented, the average and below average in terms of academic achievement, logical-mathematical and linguistic intelligence (Wodi and Dokubo 2012). Some people are highly gifted in mental/cognitive reasoning, while others are highly talented in manipulative skills and innovations. According to Gardner (1993) in Wodi and Dokubo (2012), most people attribute intelligence to academic achievement which only measures two aspects of intelligence: logical-mathematical and linguistic intelligence. They fail to include the other aspects of intelligence; musical, spatial, bodily-kinesthetics, naturalist, interpersonal and intrapersonal intelligence (Fleming 2014; Bailey 2015). Mental/cognitive reasoning and academic achievement are not the only ways or criteria for measuring intelligence (Awang, Sail, Alavi, and Ismail 2011 in Dike 2013). According to Temiz (2021:27), there are eight kinds of intelligences which "...can be briefly described as verbal-linguistic intelligence, the ability to express oneself or to produce ideas using language and words; mathematical or logical intelligence, the ability to think and reason logically and to use numbers; visual-spatial intelligence, the ability to think spatially, read and understand visual materials, such as maps, and to express oneself visually; musical-rhythmic intelligence, the ability to comprehend and compose musical pitches, tones and rhythms; bodily-kinaesthetic intelligence, the ability to produce something or solve problems using one's physicality; interpersonal intelligence, the ability to socialise, co-operate, and deal well with others and to understand their motivations; intrapersonal intelligence, the ability to know and understand oneself; and lastly, naturalistic intelligence, the ability to respect and understand nature". In addition, Gardner and Hatch (1989) identified seven forms of human thinking which are also aspects of intelligence. The seven forms of intelligences which human beings exhibit are included in the eight kinds of intelligences stated by Temiz (2021) above except for the naturalistic intelligence. VTE programmes take into

consideration and explore the various aspects of intelligence to the benefit of recipients. Lack of proper understanding of the uniqueness of VTE programmes may be responsible for the negative attitude of some people towards the programmes in Nigeria (Nwosu and Micah 2017; Ogundele, Waziri and Idris 2014).

VTE has been defined by different authors from different angles. According to Odu (2011), it is that aspect of education which aims at producing specialised employees for employment in specific occupation(s). Ethel (2014) describes VTE as that which is tailored towards the training and retraining of trainees for the acquisition of skills and competences. Gilchrist (2020) sees it as a process of training/equipping trainees with vocational skills needed to be successful in their chosen career as employees in an industry in their field or as self-employed.

VTE programmes in Nigeria fall into the following categories: artisans, technicians, sub-professionals, and professionals (Akpan, Usoro and Ibritam 2003). The grouping emanated from the differences in the trainees' level of theoretical knowledge at the point of entry and exit, skill acquisition, training requirement at the point of entry and certification at the end of the training.

The level of theoretical knowledge of an artisan (Eze 2010; Ogundele, Waziri and Idris 2014) is not the same as that of a technician in the same trade or vocation. In Nigeria, artisans are those who are trained by master-craftsmen through the open apprenticeship system. Their training does not require any paper qualification or written exam. Artisans are mainly trained on practical aspects of the trade with little or no theoretical concepts. Artisans are at a very low level of vocational education programmes in Nigeria in terms of academic certification (Eze 2010). Their training does not require much academic activity, as the main purpose of the programme is to satisfy societal needs technically at a low level of maintenance and repairs of some basic equipment and machines (Ogundele, Waziri and Idris 2014). There are no strict qualifications needed for one to be enrolled as an artisan and there are no age limits (Sofoluwe 2014). The duration, mode of entry and exit are flexible and vary from trade to trade and the individual master-trainer or vocational training centre. There is no uniform curriculum for the training of artisans but the acquired skills in the same trade from different vocational training centres or master-trainers are the same due to the technical nature of the training programmes which is practical (Sofoluwe 2014; Eze 2010). The programmes produce trained manpower to serve the society at that level of vocational education which could be formal or informal.

The next level of VTE programmes in Nigeria are the technicians, and they are of higher level than the artisans in terms of the theoretical aspect of the trade (Ogundele, Waziri and Idris 2014). Their training is more demanding when compared with that of the artisans. They are trained to understand some theoretical concepts behind some of the practical activities to which the artisans may not be exposed. The duration, mode of entry and exit are specified and there is a uniform curriculum. It is offered mainly in Technical Colleges and accredited Vocational Training Centres in Delta State, Nigeria. Before their graduation, the technicians sit for three examinations; Federal Craft Examination, Trade Test Grade 2 and 3, and City and Guilds of London Institute (C&G) which has now been replaced with West African Examination Council (WAEC) Technical examination with centres all over the state.

The next level is the sub-professionals, and they are products of colleges of education which are offering vocational-technical courses, mono-technics, and polytechnics (Ogundele, Waziri and Idris 2014). Those that graduate from mono and polytechnics with Higher National Diploma Certificates (HND) are called technologists in Nigeria. The mode of entry and exit are specified and strictly adhered to. The level of training is higher than that of the technicians in terms of theory and practice. Those from colleges of education possess the Nigerian Certificate in Education (Technical), (NCE); while those from mono-technics and polytechnics possess the National Diploma (ND) and Higher National Diploma (HND) Certificates respectively (Sofoluwe 2014). The highest level of VTE produces the professionals and they are graduates from universities. They hold a university degree from various professions (BSc – PhD). VTE programmes are designed to give opportunities for trainees to be gainfully employed or establish on their own as practising Automobile Mechanic, Electrician, Builder/Bricklayer, Carpenter/Furniture maker and all other trades at the technician and sub-professional to professional levels. The programmes are multifarious and have a place for individuals who are willing and able to pass through the training rigours that are involved at any of the levels: artisan, technician, sub-professional and professional.

Vocational technical trainees should be equipped with the theoretical and practical skills that are needed to be self-reliant in their various areas of specialisation. Theoretical and practical knowledge is required for effective and efficient service delivery. It is the educators (trainers) that are responsible for the training of the trainees and their competency level is expected to meet the necessary standard stipulated in their conditions of service. Therefore, the need for educators to be experts in their various areas of

specialisation is not negotiable. Onwenonye (2015) states that theoretical knowledge and practical experience are the two inseparable major components of vocational and technical education programmes that must not be downplayed. The trainees on graduation are to be gainfully employed or become employers of labour by establishing in their various areas of specialisation. However, it has been observed that most of the trainees on graduation from the various vocational technical institutions have not been able to secure jobs nor establish in their various areas of specialisation (Ethel 2014; Andin and Ambotang 2015; Anta 2015). These vocational technical education graduates are not adequately trained practically in their various institutions (Okolie *et al.* 2019). Moreover, educators in these institutions seem not to have adequate practical preparation and experience for their technologically oriented job (Dokubo 2017). Teboho (2000) in Chimezie (2012) concludes that, with the present educational system of Nigeria and most developing countries, educators are not yet ready for the training of their students technologically to face present globalisation in the world of technology (Okoye and Arimonu 2016).

The design and delivery of VTE to date can be explained by the theory that was propounded by Prosser which is known as “Prosser’s Sixteen Theorems on Vocational Education, A Basis for Vocational Philosophy” (Prosser and Quigley 1949). Prosser’s Sixteen Theorems were propounded as bases for the establishment of vocational education programmes but did not address key issues such as the approach to provision of funds, vocational technical education (VTE) curriculum, resources, synergy with relevant industries for effective training of trainees in VTE institutions, which is a growing demand in Nigeria’s VTE programmes. Therefore, there is a need to develop a new VTE model that describes the requirements for driving a sustainable and efficient VTE programme in Delta State, Nigeria which Prosser’s Sixteen Theorems failed to address. This study is an attempt to develop a new VTE model that describes the foundation for an effective and efficient VTE programme in Delta State, Nigeria. The proposed new model will address the limitation of the Prosser’s Sixteen Theorems on vocational education. This will further bridge the existing gap between the training received and that which is needed to function in the world of work.

1.2 Statement of the Problem

Vocational technical students are expected to be well equipped with the theoretical knowledge and practical skills that are needed for them to be self-reliant in their various areas of specialisation on

graduation. It appears that vocational-technical education programmes in Delta State, Nigeria have not achieved their primary goal of equipping trainees with necessary skills to function in the world of work (Aina 2020; Okolie *et al.* 2019; Oviawe 2017; Ayonmike, Okwelle and Okeke 2015; Lilly and Efajemue 2011). The literature has indicated that vocational-technical education programmes, globally, are meant to train and retrain trainees to be knowledgeable and practically oriented, to be self-reliant in the world of work as employees or employers of labour (Gilchrist 2020; Dokubo 2017; Odu 2011; Goel 2009; Robbin 1992; Osam 2013; Ekpenyong 2014; Ethel 2014; Idialu 2014).

Unemployment of graduates of VTE programmes in Delta State, Nigeria, and their inability to establish and create jobs for others shows not only lack of specific skills but other factors such as economic conditions, resources for business start-up, lack of decision-making and problem-solving skills (Zite and Deebom 2017; Ayonmike, Okwelle and Okeke 2015; Wodi and Dokubo 2012; Nwogu and Nwanoruo 2011). There is a gap in terms of practical skills between the learning experiences of trainees from their various institutions and those which are needed in their various fields of specialisations as employees or employers of labour (Nwosu and Micah 2017; Akanbi 2017; Dokubo 2017; Olaitari 2015; Oluntope 2014). There may be factors responsible for the gap between the acquired practical skills of trainees and that which are needed for vocationally trained personnel to become employee or employer. These factors needed to be identified and addressed because they hinder the delivery of the programmes. Hence the necessity for the assessment of the factors affecting the effective implementation of VTE programmes in Delta State, Nigeria to see how the gap could be filled becomes imperative.

1.3 Research Aim and Objectives

Unemployment, under-employment, and inadequate vocational-technical skills prevalent in Nigeria are possible contributory factors to the prevailing insecurity and insurgency in the country in which Delta State is a part (Ogundele, Waziri and Idris 2014; Eze, Ezenwafor and Obi 2015). There seems to be a mismatch between the skills acquired by graduates of vocational-technical education programmes, the labour market, and the economic environment of Nigerian society (Okoye 2014; Akpan, Usoro and Ibiritan 2003). Graduates are either rejected or retrained by industries to be able to meet with the demands of their vocation, which shows a missing link between the learners, educators, and the curriculum content of such programmes, hence the programme has been referred to as a failure by society (Eze, Ezenwafor and Obi 2015; Oluntope 2014; Dike 2013). The overall aim of this study is to

investigate the impact of the factors affecting the effective implementation of VTE programmes in higher institutions in Delta State, Nigeria with a view to develop a proposed VTE model to describe other key issues that were not addressed in Prosser's Sixteen Theorems on vocational education and predict how the challenges of VTE in Delta State can be solved. The objectives of the research are to:

- i. Investigate the factors that can affect the effective implementation of VTE programmes in Delta State, Nigeria.
- ii. Evaluate the perceptions of employers, trainers and trainees on the factors affecting the performance of graduates of VTE programmes.
- iii. Evaluate the strategies that should be adopted to deliver effective VTE programmes.
- iv. Develop a proposed VTE model that can be utilised to deliver effective vocational technical education programmes in Delta State, Nigeria.
- v. Evaluate how Prosser's Sixteen Theorems could be extended to support the delivery of effective VTE programmes in Delta State, Nigeria.

1.4 Research Questions

The study was guided with one main research question and four sub research questions. The main research question is:

What are the trainers', trainees', and employers' perceptions of the factors affecting the performance of graduates of VTE programmes in Delta State, Nigeria and what changes would they like to see?

The sub research questions are:

- i. What are the factors affecting effective implementation of VTE programmes?
- ii. What are the strategies that could be adopted to deliver effective VTE programmes?
- iii. What kind of framework would be utilised to deliver effective VTE programmes?
- iv. How could Prosser's Sixteen Theorems be extended to support the delivery of effective VTE programmes?

1.5 Research Area and the Relevance

The areas that are researched in this study are the factors affecting the implementation of VTE programmes in higher institutions in Delta State, Nigeria. Delta State is among the states in Nigeria that are rich in oil production. Two government higher institutions in the state are offering full vocational-

technical courses. As a vocational-technical educator and a lecturer in a vocational-technical higher institution in Delta State, Nigeria and coupled with the training and years of experience in the field and from reviewed literature, the researcher has observed that there is a gap between the training received by vocational-technical trainees and that which is needed by employers and service consumers in the state (Oviawe 2017; Dokubo 2017; Akanbi 2017; Okoye and Arimonu 2016; Eze, Ezenwafor and Obi 2015; Oluntope 2014; Lilly and Efajemue 2011). This study, therefore, sets out to identify the factors affecting the effective implementation of VTE programmes in higher institutions in Delta State, Nigeria; to find out how the programmes are perceived by trainers, trainees and employers in respect of the performance of the graduates; to find out the strategies that should be adopted for effective delivery of the programmes in the state; and to develop a proposed model that could be adopted for effective delivery of VTE programmes; to find out how Prosser's Sixteen Theorems could be extended to support effective delivery VTE programmes in Delta State.

The findings of this study are expected to be beneficial to the following stakeholders:

Curriculum Planners and implementers shall benefit from the findings of the study as it will guide them in curriculum review and implementation as the need arises. The vocational-technical educators shall benefit from the findings of the study as it will act as a guide for them in their lesson preparation to achieve learning objectives. As for vocational-technical trainees who are the direct recipients of the programmes, they shall benefit immensely from the findings of the study in the aspect of effective and efficient training with functional facilities that will equip them for the world of work. Vocational Technical Institutions (VTIs) shall equally benefit from the findings of the study because it will boost their institutions in terms of facilities and infrastructure. Furthermore, the industries which are at the receiving end of the graduates of VTE programmes as their potential employers shall benefit from the findings of the study, as it will reduce their cost of retraining of those that they will eventually employ. Likewise, the state government will benefit from the findings of the study as it will guide them on the areas of programmes' review and improvement. Above all, the public shall benefit from the findings of the study, as it may reduce unemployment and social vices. The public will also benefit from the services of the graduates within the community in which they live.

1.6 Scope of the study

The study covered two of the government vocational-technical higher institutions in the state. Vocational-technical institutions are directly under the full control of the government who are also responsible for their administration. It shall seek the opinions and views of vocational-technical educators and trainees in government higher institutions in Delta State, Nigeria on the factors affecting the effective implementation of vocational-technical education programmes in the state. The study shall also cover the views of managers of targeted industries in the state capital on the relevance of the skills acquired by graduates of VTE programmes in the state from their experience with those that they have encountered during their industrial training or working with as employees.

1.7.1 Methodology

The qualitative and quantitative research methodology was used in the conduct of the research because it involves people's perceptions of VTE programmes in higher institutions in Delta State, Nigeria (Soifermam 2010). Survey research is considered for this study as it would help to assess the thoughts and opinions of the respondents on VTE programmes by the researcher (Kelley *et al.* 2003). The survey supports the method of administering a predetermined set of questions to a given sample which the researcher adopted hence it was considered suitable for the study (Burton 2007).

The cross-sectional approach which is observational in nature was used as the research involved the generation of qualitative and quantitative data from individuals at a time from a given population. Since the study involved respondents from different categories (trainers, trainees, and employers), the approach is considered appropriate (Burton 2007).

A mixed methods research approach was adopted as the study involved the use of semi-structured interview and questionnaire as instruments for data collection for the study (Brannen 2005). Mixed methods were considered the best approach that would generate the required data to answer the research questions that guided the study. The questionnaire was administered to the trainers, trainees, and the managers of targeted industries in the state capital as respondents of the study. The total number of employers, trainers, and trainees from the six targeted industries and two-government vocational-technical higher institutions in the state that was used for the study were seventy-four (74). The managers/representatives of five out of the six targeted industries that were used for the research in the state headquarters were interviewed to obtain their perceptions of the training received by their

employees that graduated from vocational-technical education programmes or those that did their industrial attachment with their various industries. The managers were reached by visiting their various industries and booking an appointment for the interview. The researcher conducted the interviews face-to-face with the managers/representatives of five out of the six targeted industries, ten instructors/trainers and four trainees using semi-structured questions; and distributed and collected the questionnaire from the 74 respondents of the study for analysis. The data collected were analysed thematically using NVIVO. Mixed methods techniques were considered a better option than the mono method for error reduction (Creswell and Creswell 2018; Creswell and Plano 2007 in Soifermam 2010). NVIVO as an analytical tool was used to analyse the interviews data collected for the study. NVIVO is computer software that is used for qualitative data analysis (Hilal and Alabri 2013). It accommodates a variety of data such as word documents, PDFs, and audio files. NVIVO is a good analytical tool for analysis of survey data that has an open-ended response; hence it was considered an appropriate analytical tool to be used for the study (Azeem and Salfi 2012).

1.7.2 Theoretical Approach

The study is mapped out to look at VTE programmes in Delta State, Nigeria in three stages/periods: the pre-colonial period, the colonial period, and the post-colonial period. VTE programmes cut across the three periods hence it is considered an important aspect of the study that should be investigated. The development/progress and challenges of the programmes in these periods acted as a guide on how the study was directed in finding answers to the research questions and making contributions to knowledge. The research is designed according to the following theoretical approaches:

The ontological position that was adopted for the study was constructivism which believes that social phenomena and their meaning are constantly being accomplished by social actors which are in constant construction and revision. Constructivism is, therefore, considered a better option for the study as it involves elucidation of the views and opinions of respondents who are part of the social actors in the society (Hogue 2011). The research is set out to find out the views of people on the realities of the factors affecting the effective implementation of VTE programmes in Delta State (Lawson 2004). It is those at the helm of affairs of the government that are responsible for its administration. Those in the position of authority can effect positive changes and reduce some of the problems of VTE in the state. The problems

are not natural but are caused by humans and can also be constructively reduced by people (Rieglar 2012).

Interpretivism relates to ontology in that it holds the view that "...reality is perceived through intersubjectivity through consideration of meanings as well as understandings of social and experiential aspects in the research" (Alharahsheh and Pius 2020:42). The researcher, therefore, combined interpretivism and ontology paradigms as the underpinning philosophy of the study. The Interpretivist approach was also used in the conduct of the study as the research is designed to elicit responses from respondents, subjecting it to analyses and interpretation based on the findings (Edisingha 2012). The findings shall be used as a guide for the development of a workable model that would deliver effective vocational-technical education programmes in Delta State, Nigeria.

The Inductive approach was used as the study is more of theory building than testing. The Inductive research approach according to Varpio, Paradis, Uijtdehaage and Young (2020), moves from specific data concerning a given phenomenon to the general. Since the study does not seek to test any hypothesis or theory, the researcher adopted the subjective inductive approach. The approach suits the use of constructivism which is one of the study paradigms.

The theoretical framework of the study was based on Prosser's Sixteen Theorems on vocational education (Prosser and Quaigley 1949). The theorems were the ideas of Prosser, but the source of the original statements was reported by Prosser and Quaigley (1949). The original statement of Prosser's Sixteen Theorems was also cited in 1925 by Prosser and Allen in their book titled "Vocational Education in a Democracy" (Reynaldo and Martinez 2007:73). Prosser's theorems of vocational education remain valid in the field despite their age because the theorems are still relevant in the field. The philosophical ideals in Prosser's Sixteen Theorems were useful and adopted as they contain some theoretical assumptions that explain the relationships among the phenomena of the study. The reviewed literature pointed out that the failure of vocational-technical education programmes in Nigeria which applies to Delta State are related to the training environment, tools and equipment, skills, and production ability training problems (Mima-Eyovwunu *et al.* 2020; Zite and Deebom 2017; Nwosu and Micah 2017; Okoye and Arimonu 2016; Saidu, Abba and Malgwa 2015; Oluntope 2014; Wodi and Dokubor 2012; Lilly and Efajemue 2011); which are the philosophical ideals in Prosser's Sixteen Theorems. From reviewed

literature, VTE has been identified as a programme that should be skills-based and service-driven for effective and efficient service delivery in various occupations (Okoye and Arimonu 2016). Knowledge and skill acquisition are keys to success in vocational-technical education programmes (Nwosu and Micah 2017; Dokubo 2017; Ogundele, Waziri and Idris 2014).

The concept behind the idea of vocational-technical education programmes anywhere at any given period is 'work' (Gilchrist 2020; Nwosu and Micah 2017; Okoye 2014; Seyi 2014; Doolittle and Camp 1999). UNESCO 2006 in Triki (2010:3) states that "TVET refers to a range of learning experiences which are relevant to the world of work and which may occur in a variety of learning contexts, including educational institutions and workplace".

1.8.0 Outline of the Study/Chapters Overview

In seeking for stakeholders' views on the factors affecting implementation of VTE programmes in Delta State Nigeria. It was necessary for the researcher to examine the definition of VTE, ascertain the level of achievement of the goals and objectives of the programmes and the strategies to be adopted for its effective delivery. For the achievement of the above, the study was divided into seven chapters. The outline/overview of the seven chapters of the thesis are presented under the various chapters' headings below:

1.8.1 Chapter One: Introduction

This is the introduction chapter that presents the background and context of the study by defining VTE. It shows the various categories of the programmes and the distinguishing features of the categories. It also shows the entry requirements of the categories. In addition, the expected knowledge, and skills to be acquired at the various categories were enunciated. The researcher stated the paper qualification and certification that will be awarded to trainees that meet the requirement for the award at the end of the training programmes. The chapter also states the problem of the study from observed acquired skills of the graduates and that required for effective service delivery as employees in the industry or as self-employed in their trade areas of specialization from reviewed literature. The research aims and objectives with the research questions that guided the study were clearly stated. Also, the scope of the study was defined, the methodology adopted was introduced, and the overview of the chapters of the study (Chapters one to seven) was summarised.

1.8.2 Chapter Two: Cultural, Historical and Political Context of the Research

The chapter explored the context of VTE in Nigeria by examining the history of vocational technical education in the country contextually from available literature starting from the pre-colonial era when western education has not infiltrated into the traditional VTE programmes. The progress of VTE during the era of colonial masters that introduced western education into the country was equally examined. The state of the programme under post-colonial era was elucidated. The chapter also examined the history of VTE in Nigeria considering the pre-colonial, colonial, and post-colonial periods; and concluded with a chapter summary and signposting of the next chapter which is the literature review.

1.8.3 Chapter Three: Literature Review

The chapter was devoted to a literature review using diverse data bases to search for relevant literature on VTE programmes in Nigeria and other countries in Africa and Europe. The search terms used which also formed the chapter's subheadings were enunciated. Therefore, the chapter considered: the theoretical framework of the study; the programmes in relation to general education; the programmes in the state, country and other countries such as United Kingdom, United States of America, Switzerland, Australia, Germany, and Japan; the way the programmes can be used as a tool for youth empowerment; the philosophy of the programme; vocationalism and employability; what it takes for skill acquisition and retention; curriculum of the programme in Nigeria and its implementation; facilities and infrastructures; people's perception(s) of VTE in Nigeria; gender issues in VTE in Nigeria; chapter summary and signposting of the next chapter that deals with the studies' methodology.

1.8.4 Chapter Four: Methodology

The chapter contained the detailed methodological approaches that were adopted in the conduct of the study. It justified the reason(s) for the design of the study. The necessary procedures taken to achieve the goals and objectives of the study were stated. It showed how the research questions were generated. Research methods used for the study were justified and the theoretical directions underpinning the research methodologies were clearly stated. The chapter also looked at the study's validity, credibility, dependability, and transferability. The population of the study and the sample size were clearly stated with the sampling techniques that was used in the selection of the sample. The methods of data collection and analysis were stated. Also, the research ethics and procedures that were followed in the

conduct of the study were stated. The chapter concluded with summary and signposting of the next chapter on findings and analysis.

1.8.5 Chapter Five: Findings and Analysis

The chapter presented the results of the study from the two instruments (interview and questionnaire) used for data collection. The results were analysed separately according to the design of the study. The themes that emerged from the interview were grouped under nine main themes for analysis. The number of respondents that responded from the various groups (trainers, trainees, and employer) to each of the themes were stated. The emergent themes were strength of VTE; constraint to implementation of VTE; industries and VTE facilities; industries level of satisfaction of VTE graduates; role of the industries in VTE; VTE and industries synergy; state of VTE practical training in Delta State; curriculum planning and review; and improving VTE delivery.

The questionnaire results were presented and analysed under five main sections: factors affecting effective implementation of VTE programmes; causes of factors affecting effective implementation of VTE; strategies for effective delivery; the most important factors impacting the quality of VTE programmes; and those to be involved in curriculum planning and review. The questionnaire results were presented in tables and figures. The summary of the chapter was followed with a signpost of the next chapter which is discussion of findings.

1.8.6 Chapter Six: Discussion of Findings

In this chapter, the analysed data from the two sources of data gathering instruments used for the study were triangulated and combined for discussion. The triangulation and discussion were carried out by integrating the results from both instruments into three sections: strengths and constraints of VTE programmes; VTE institutions and industries; and improving VTE delivery.

The chapter also considered the need for extension of Prosser's Sixteen Theorems to support VTE delivery in Delta State as an addition to knowledge. The developing of the extensions was derived from the findings of the study and reviewed literature. The extension of Prosser's Sixteen Theorems was propounded to address the main issues affecting VTE delivery in Delta State. The issues were stated in the theorems as bases for the establishment of VTE programmes without stating how the issues could be addressed. The proposed extension aimed at addressing the issues and bridging the gap. In addition,

the limitations/delimitations of the study were stated. The chapter ended with a summary and signposting of the next chapter which is on the study's conclusion.

1.8.7 Chapter Seven: Conclusion

This chapter presented the answers to the research questions from the results of the study. It summarises the overview of the study; states the contributions to knowledge; presented a novel VTE programme delivery model that could be used for effective VTE programmes delivery in Delta State. The proposed model is designed to mitigate the reoccurring challenges of VTE programmes for decades. Details on the factors that would make the model to work in the state were expatiated. Recommendations were given from the findings of the study on ways of improving the delivery of VTE programmes and suggestions were made for further studies. The chapter ended with a summary.

1.8.8 Chapter Summary

The survival of any nation in this fast technologically growing world to a large extent is dependent on the level of its technological advancement and growth (Ogundele, Waziri and Idris 2014). Vocational technical education is the bedrock of technological growth and advancement and its neglect will have devastating effects on the nation (Seyi 2014; Okoye and Arimonu 2016; Ogundele, Waziri and Idris 2014). This chapter looked at vocational technical education in Delta State, Nigeria from the pre-colonial to the post-colonial era and highlighted some of the major challenges facing it at the various developmental stages.

The chapter also presented an overview of the seven chapters of the thesis (Chapters one to seven). The next chapter will consider cultural, historical, and political context of the research.

Chapter Two

Cultural, Historical and Political Context of the Research

2.0 Introduction

The context of VTE in Nigeria is established through an examination of its historical roots and influences from pre-colonial through to the post-colonial era. Nigeria is one of the countries in Africa. It is made up of 36 states of which Delta State is one. The state called Delta is one of the states in the South-South Zone of the country and has its headquarters at Asaba. The state is made up of 25 local government areas with over ten different languages, which account for its multi-cultural heritage that is dynamic in nature. Historically, the state was created from the defunct Bendel State in 1991, whose capital was Benin City, which is now the present capital of Edo State. The various ethnic groups are governed politically by their cultural norms which vary from one ethnic group to another. Before the advent of colonial masters, various ethnic groups were known for certain vocational trades which were made compulsory for every member of the community. The cultural heritage and value systems were highly esteemed across the ethnic groups. Respect for elders (those older than you in age) is one of the cultural norms of Deltans irrespective of their ethnicity. Cultural values and family trade/vocation were being taught, practised, and passed on from one generation to another and it is what forms the curriculum content of vocational training in all the available trades in the various communities across the state today (Ogundele, Waziri and Idris 2014; Akpan 2003). The curriculum used for the training of recipients of vocational education programmes at that time of the pre-colonial era were unwritten (Ogundele, Waziri and Idris 2014). However, the training of trainees by different master craftsmen in the same vocation/trade were similar.

2.1 Pre-colonial Era

Historically, vocational technical education programmes are part of the culture of Deltans. Some families and communities are known and described by their vocational trade(s). Families which are known for specific vocations in which they specialise preserve their vocation, and pass it on from generation to generation through training. Individuals that are interested in trades that are outside their family trade send their children out to become apprentices to someone else who specialises in such a vocation/trade and this practice cuts across the various ethnic groups in the state and other states of the country (Ogundele, Waziri and Idris 2014).

Delta State, as well as other states in Nigeria, has a very rich indigenous vocational technical education system which was meeting the needs before the advent of colonial masters (Oyeleke and Akinyeye 2013). This rich historical heritage of the Nigerian educational system, which applies to Delta State, has undergone and is still undergoing changes from the political era of the colonial masters to the present-day political era. VTE programmes in the pre-colonial era were meant to meet the needs of the people at subsistence level. There was no problem of unemployment, not because people were few, but because there were functional VTE programmes that were put in place to meet the needs of the individuals and that of the society in which they lived (Umunadi 2013). The people were industrious, obedient, submissive, and hardworking (Ogundele, Waziri and Idris 2014). Every member of the society was fully engaged and equipped with relevant marketable skills that were needed by the society. Family members consciously and unconsciously learned the trades for which their families were known (Akpan, Usoro and Ibritam 2003). Notwithstanding, these virtues are being gradually eroded with the interwoven western culture of rights and equality (Diara and Christian 2013). For example, Nigerian culture does not believe that a child has an equal right with an adult (Seyi 2014). In addition, women are not seen as being equal with men (Abdullahi 2017; Seyi 2014). Therefore, imbibing the western culture of rights and equality has reduced the inherent cultural heritage of obedience and submissiveness to elders (Diara and Christian 2013). However, westernisation has improved a lot of things in Nigeria and has saved the people from some cultural beliefs that were sinful and evil, among which are slave trade and killing of twins (Diara and Christian 2013).

The traditional VTE programmes before the coming of the colonial masters and introduction of western education were well organised, in that they had goals, purposes and methods of teaching (Ogundele, Waziri and Idris 2014). Although their curricula were not written, they were clear and unambiguous with clear goals and objectives. The goals were to; conserve the cultural norms and values, train and equip children with vocational skills needed to be self-reliant in the world of work (Oyeleke and Akinyeye 2013). The purpose of traditional VTE was full training of the child's intellect, physical and moral; introducing him/her to the community and to infuse in him/her societal norms and obedience to constituted authorities and those older than him/her in age. Furthermore, it provided opportunity for the young ones to acquire skills in a specific trade/vocation, training on how to live with others in harmony, development,

understanding, appreciation, promotion and preservation of cultural norms and values of the society (Ehinder 1986 in Oyeleke and Akinyeye 2013).

The people of Delta State had their way of inculcating the knowledge, skills and aptitude into the young ones and trainees under their control. Some of the methods they adopted among others were direct instructions, demonstrations, and questioning. Additionally, the learners must pay attention, watch carefully what the master craftsman was doing, answer and ask questions if any. The informal method of instruction was used during the pre-colonial era as the people were not literate. There was no age limit for the learning of any trade, but the main determinant factor was interest and willingness to apprentice with the master craftsman of the trade/vocation of interest (Oyeleke and Akinyeye 2013).

There were so many trades/vocations that were available from which to choose. So, any member of a family who wished to learn a trade outside their family trade had the option of going to become an apprentice to a master craftsman from another family that was skilful in such trade. Certain trades cut across families, ethnic groups, and states. The available trades/vocations ranged from service trades to production/manufacturing trades (Oyeleke and Akinyeye 2013; Nwokeocha 2015).

The apprenticeship system that was in vogue at that time of the pre-colonial period was well organised with laid down rules and regulations which were not written but were strictly observed. There were specific periods to apprentice with a master craftsman for non-members of the family and that was determined by the nature of the trade/vocation and the master craftsman. There was usually an agreement between the master-craftsman and the person/parents or guardian of the apprentice before training commenced. This agreement was unwritten but was usually adhered to strictly. In most cases, the apprentice usually lived with the master craftsman for the period of his/her apprenticeship. The apprentice will do a lot of housework at the close of the day's activities while the master usually took responsibility for feeding, clothing, protecting, and sheltering the apprentice. At the expiration of the agreed period of apprenticeship, the apprentice was set free ceremoniously with working tools and materials with which to start his or her workshop and become a master trainer to other apprentices that may come to him or her to learn his or her trade (Oyeleke and Akinyeye 2013).

The major occupations of Deltans at that time of the pre-colonial era were crops and animal production, fishing, wine tapping, hunting, and storytelling to preserve history for the future generation. These occupations are still being practised today in most parts of the state under open apprenticeship methods.

The rich cultural heritage and dynamic traditional vocational-technical education programmes instituted by the hard-working Nigerians, Deltans, before the coming of the colonial masters were viewed as obsolete at the dawn of colonialism and the introduction of western education (Akpan, Usoro and Ibiritan 2003).

Oyeleke and Akinyeye (2013) state that education in Africa which applied to Nigeria and Delta State at the time of the pre-colonial era (before 1815) was much more of a practical rather than theoretical nature and was meant to meet the vocational demands of the people. Their educational enterprise then was effective and goal-oriented. It was adequate and satisfied the immediate needs of the individuals and the society at large. It should, therefore, be understood that Africans were educated but not in a western sense. According to Oyeleke and Akinyeye (2013), the curriculum was not documented but it had clear aims, goals, and objectives. Every member of the society went through the training and learning experiences were centred on the following aspects of life:

- i. Physical Training – They embarked on acrobatic display, drumming, dance, wrestling. Their psychomotor domain was well taken care of and open to the wider society.
- ii. Intellectual Training: Intellectual activities include counting, storytelling, proverbs, poetry, legends, local and ancestral history, story-relays, riddles, moonlight storytelling.
- iii. Vocational Training: Functionality was what guided the African education system. The curriculum was justifiably tailored towards achieving and mastering specific tasks. These include:
 - (a). Agricultural training such as farming, hunting, fish farming, animal husbandry and others.
 - (b). Vocational trades such as the making of fabric, trades, and crafts such as weaving, carving, carpentry, building, barbering, hair plaiting, palm wine tapping and selling, dancing and acrobatics.
- iv. Character training such as respect for elders, table manners, toilet manners, greetings, community participation and promotion of cultural heritage. (Oyeleke and Akinyeye 2013:74)

Politically, various communities were governed according to their cultural heritage. Some of the ethnic groups are governed by Obi which is hereditary in nature. The eldest son of the ruling Obi takes over the kingship/leadership of the community at the death of his father and his eldest son will equally take over the throne from him at his demise. Some communities are governed by the oldest man in the community and is called 'Okpala-Uku' and at his death, the next oldest man will take over and the

process continues unquestioningly. This was the political way of governance in Delta State, Nigeria during the pre-colonial period. Therefore, the traditional government sustained vocational-technical education programmes that were in operation during the period. The political governance of the state today has changed as the entire state is under the leadership of a politically elected governor. The various local government areas with the communities within their geographical locations are governed by their politically elected chairmen.

The political changes that have taken place in the state because of the governance of the colonial and post-colonial government have affected the vocational-technical education programmes which have now shifted from family to state control. All educational programmes in the state are now under the control of the government. The state government has been empowered by law (Nigerian constitution) to establish and to close any educational institution within its jurisdiction.

2.2 Colonial Era

The coming of the colonial masters into the shores of the country called Nigeria which Delta State is part of changed the system of VTE programmes in the state. It was the European missionaries that first arrived in Delta State and introduced their western education. However, they had their primary aims and purposes of coming to Africa (to trade and preach the gospel) which would have been difficult to achieve without western education because of language barrier. Therefore, the curriculum of the kind of education that was introduced at the time of the colonial era (1861 - 1960) was channelled towards the achievement of their goals and not that of the Africans (Dike 2013; Ogundele, Waziri and Idris 2014). Their narrow conception of training some of the indigenes whom they used to deliver their message to the people guided the structure of the school and its curriculum which were predominantly Bible reading, religion, religious stories, and songs, prayers, sewing for girls and farming for boys. Therefore, their religion formed the school curriculum at that period (Oyeleke and Akinyeye 2013). The Roman Catholic Mission in 1876 established a vocational school called Topo Industrial School for Delinquents near Badagry in Lagos State, Nigeria.

It was during the colonial era that VTE programmes began to improve in Nigeria (Diara and Christian 2013). It was transformed from being an informal educational programme to a formal education programme. Literature has stated that the first formal vocational-technical institution was established in Nigeria in 1895 and was cited in Calaba (Ogundele, Waziri and Idris 2014). The formal vocational-

technical institutions that were established during the colonial era were mandated to teach and impart theoretical knowledge and practical skills into the learners in preparation for useful living in the world of work. Ogundele, Waziri and Idris (2014) noted that in 1925, there was an educational policy that favoured VTE programmes in Nigeria which applied to Delta State. The policy led to the establishment of more vocational-technical institutions for the training of trainees. The colonial masters saw the need of VTE programmes in Nigeria as time went on and responded to the challenges by mandating some of the corporations (Post Telegraph Development, the Nigerian Railway Corporation, and Industrial companies) in the country to train technical assistants in various trades (Ogundele, Waziri and Idris 2014).

The colonial masters established Yaba Higher College in 1934; and, in 1952, they established three technical institutes, seven trade centres and eighteen handicraft centres in Nigeria (Ogundele, Waziri and Idris 2014; Akpan, Usoro and Ibritam 2003). However, the colonial masters did not emphasise VTE programmes in Nigeria. Their emphasis and focus were on general education (Wodi and Dokubo 2012 in Mamman 2013).

Before Nigeria gained her independence in 1960, the colonial masters prepared the starting point for the continuity of vocational-technical education programmes. Ogundele, Waziri and Idris (2014) state that a nine-man committee was set up in 1959 to review the Nigerian education system. The committee was named after the chairman – Ashby, hence it was called the Ashby Commission. The membership of the commission comprised: three Nigerians, three Americans and three Britons. The commission drafted a National Policy on Education for Nigeria. This led to the National Policy on Education seminar which was held in 1973 which modified the 1959 conference papers and adopted the National Policy on Education which came into force in 1977 (Oyeleke and Akinyeye 2013).

2.3 Post-colonial Era

The post-colonial era began at the dawn of the independence which the colonial masters granted Nigeria on the 1st of October 1960. During the post-colonial era, the National Policy on Education was revised in 1981, 1987 and 2004 respectively to meet the technological needs of the country. The first revision (1981) of the policy, led to the change in the Nigerian education system from 6-5-2-3 system to the 6-3-3-4 system of education in 1982 (Wodi and Dokubo 2012).

The new indigenous post-colonial education system of 6-3-3-4 emphasises VTE from the first six years of primary education through the first three and second three years of secondary education to the four years of university education where the trainees become professionals in various fields. Despite the new education system that favoured VTE programmes, and the revision of the National Policy on Education, VTE has left much to be desired in terms of skill acquisition (Serumu 2015; Okoye and Arimonu 2016). The post-colonial era of VTE programmes in Nigeria seems not to have provided a solution to the problems affecting its success despite curriculum restructuring (Umunadi 2013; Wodi and Dokubo 2012). Ogundele, Waziri and Idris (2014) state that the negative attitude of Nigerians towards vocational-technical education programmes has not changed. The negative attitude of Nigerians according to Ogundele, Waziri and Idris (2014), may be responsible for the present state of the programme in Nigeria which applies to Delta State.

It has been observed that VTE programmes in Nigeria, which applies to Delta State, are facing some challenges which may be responsible for their unsatisfactory state (Zite and Deebom 2017; Okoye and Arimonu 2016; Ogundele, Waziri and Idris 2014; Eze and Ike 2013). Nigeria has failed to adequately equip and position VTE for successful programme implementation (Akanbi 2017; Dokubo 2017; Dike 2013; Akpan, Usoro and Ibiritan 2003). VTE programmes are capital intensive, and the government budget had not been sufficient for their effective implementation (Nwosu and Micah 2017; Zite and Deebom 2017; Dokubo 2017; Wodi and Dokubor 2012). There is a need for innovations in VTE programmes in Nigeria to meet the needs of society (Seyi 2014).

Similarly, VTE programmes in Delta State, Nigeria is yet to attain the desired position of meeting the needs of the trainees, industries, and society in general (Ayonmike, Okwelle and Okeke 2015). There are no remarkable changes even at this present post-colonial era. Available literature (Akanbi 2017; Dokubo 2017; Ayonmike, Okwelle and Okeke 2015; Serumu 2015; Okoye 2014; Yaro and Cheledi 2012) has shown that the actual learning experiences of VTE graduates are not the same as those which are needed in the industry in which they are meant to serve as employees. This shows that there is a gap in terms of necessary skills which this study seeks to bridge through finding the strategies that should be adopted that would deliver effective VTE programmes in the state.

2.4 History of VTE in Nigeria

Key to national growth and development of nations economically and politically lies in the functionality and effectiveness of its educational system (Wodi and Dokubo 2012; Ogundele, Waziri and Idris 2014). Education in Nigeria before the advent of colonial masters was mainly vocational. The colonial masters introduced western education to enable them to carry out their trades and missionary activities. The kind of education that was introduced by the missionaries was known as the 3R's – Reading, Writing and Arithmetic (Mamman 2013). The 3Rs serve as foundation for a holistic western education that encompasses various fields of life endeavour. However, the people on their own left their rich traditional vocational education for western education which mainly produces clerks and interpreters because of financial benefits and recognition as educated elites (Nwafor and Okpaga 2015).

Looking at the various educational reforms in the country from colonial to post-colonial periods, it is obvious that VTE programmes were imbedded in all the reforms (Dike 2013). Adequate curriculum and funding that is needed for full implementation have been identified as some of the major challenges affecting the education industry in Nigeria (Akanbi 2017; Bisalla and Adeyemi 2016; Ayonmike, Okwelle and Okeke 2015; Oluntope 2014; Ogundele, Waziri and Idris 2014). Fafunwa (1974) in Serumu (2015) states that for any educational offering to be effective, it must investigate the activities of the past concerning the present and future of the community in which it is meant to serve. The implication of this is that the present is the product of the past and the future shall be the product of the present. It is the success or failure of the past that would guide in the planning of the success of the present and that of the future (Okoye and Arimonu 2016). Cultural and societal norms should form part of the guiding principles in the planning/designing of the kind of educational programme that should benefit any society at any given time (Goel 2009). This is necessary because education is meant for the people and their level of acceptance will determine the success or failure of the entire programme (Nwosu and Micah 2017).

Africans have employed a pattern of education which they have been using right from the neophyte age until the advent of the colonial masters and the introduction of western education (Nwosu and Micah 2017). It is worthy of note that every society irrespective of race or colour is unique in respect of passing societal norms and values (Oyeleke and Akinyeye 2013). Education is the means of transmitting cultural norms and values of any given society from the old to the young ones. The dignity of labour is one of

the social norms of Africans which they highly value and transmit from generation to generation (Akpan, Usoro and Ibritam 2003). Africans detest idleness especially Nigerians with families that are well known for one vocational trade or the other (Odo *et al.* 2017). Vocational trades are some of the identification marks of certain tribes in Nigeria (Akpan, Usoro and Ibritam 2003). The trainees learnt by participation through demonstration, recitation, imitation, and rituals. Teaching methods that were adopted in traditional education were practically oriented. Indigenous education in various parts of Africa countries including Nigeria was structured in such a way that met the needs of the local people. The apprenticeship method was adopted in Nigeria for the training of her citizens (Wagner 1999). However, changes in the value system with the introduction of western education that offer white-collar jobs as against blue-collar ones that vocational education has to offer, may have affected the VTE programme in Nigeria (Akpan, Usoro and Ibritam 2003).

According to Wodi and Dokubor (2012), Nigeria has established many educational institutions with minimal impact on national development. Wodi and Dokubor observed that the kind of education that has been offered in Nigeria in terms of the number of educational institutions in the country to the level of development were not comparable. Their observation was because the number of educational institutions (public and private) are on the increase without a comparable impact on national development. Gilchrist (2020) states that functional VTE programmes would boost the economy of any nation as they equip recipients with critical thinking and problem-solving skills. Gilchrist (2020) went on further to state that it is the duty of educators to teach students 'what to think and how to think'; and that students should be able to apply the knowledge and skills gained to solve societal and personal problems systematically. This seems to be missing from the experience of Nigerian graduates who have not been able to fully demonstrate these abilities (Goyol and Sunday 2020). The problems seem not to be from the students or from the teachers. For example, research findings have shown that most of the trainers in Nigerian higher institutions are poorly trained and this has affected their lesson delivery which in turn affects the performance of their graduates. According to Okolie *et al.* (2019:9), some of the challenges of educational programmes in Nigeria are "Teaching methods, poor training of the lecturers, poor curriculum development, poor interaction between the lecturers and the students, poor teaching and learning environment which negatively affect the students' development of the generic skills". The problems of the Higher Education Institutions (HEIs) in Nigeria are, therefore, traceable to governance.

“The governance and a society devoid of corruption are inevitable for any reform in education for sustainable development. Good governance and quality education bring sustainable development for a nation” (Amanchukwu 2011 in Aina 2020:36).

Wodi and Dokubor (2012) emphasised that previous educational reforms in Nigeria have failed to solve the lingering problems that have been there before independence and that, in 1954, the government of the day changed the education system in Nigeria from 8 - 6 - 2 - 3 system to 6 - 5 - 2 - 3 system. The numbers indicated the number of years spent at the various levels of the system: primary school, secondary school, higher school, and university. Wodi and Dokubor (2012) also observed that there was no remarkable difference in the two systems except for the reduction of the number of years of schooling from nineteen years to sixteen years. There was no change in the school curriculum which was loaded with theoretical subjects that are devoid of applicable skills that are needed in the world of work. However, their observation may not be correct as other scholars have also observed that education in Nigeria was mainly vocational which has a lot to do with skill acquisition even before the advent of the colonial masters and the introduction of the western education system (Oyeleke and Akinyeye, 2013). Skill acquisition has been part of the Nigerian education system right from the pre-colonial, colonial, and post-colonial eras (Nwosu and Micah 2017). During the pre-colonial era, VTE was a major part of traditional education in Nigeria (Ogundele, Waziri and Idris 2014). Colonial masters showed interest in skill acquisition and promoted it. The reviewed literature shows that it was during the colonial era vocational-technical institutions were established formally in Nigeria: Calaba Technical College in 1895; Yaba Higher College in 1934; three technical colleges – Yaba, Enugu and Kaduna in 1952 (Ogundele, Waziri and Idris 2014; Akpan, Usoro and Ibritam 2003). The post-colonial era witnessed the multiplication of vocational-technical institutions in Nigeria (Wodi and Dokubo 2012). However, progress in terms of functionality and meeting the needs of society and that of the individual left much to be desired. The problems affecting vocational-technical education programme in Nigeria of which Delta State is a part, have been an issue of concern to researchers and other members of the public (Dike 2013; Oluntope 2014; Lilly and Efajemue 2011). The problems as identified by the researchers include poor quality training, inadequate structure, and training materials.

The researcher could recall that in the early 1970s when he was in the primary school within the state, that there was a subject called Craft which was popularly known as ‘handwork’. It is called handwork

because pupils were made to produce different items such as local mats, brooms, ropes, baskets, sieves, and other items with locally sourced materials like raffia palm and other plants. Vocational technical education programmes at that time were functional even at the primary school level where it was embedded under 'Craft' as a subject. This subject was very important at that time and those local items that were being produced and submitted attracted marks/scores that were used for continuous assessment. At the end of the term, the items were sold to generate income for the school. It, therefore, became a source of internally generated revenue for the school. It was also a source of income for some industrious learners that went the extra mile to produce these local items for sale to those that may need them within the localities. It then follows that VTE has continued, from precolonial through to post-colonial era. VTE was embedded into the school system from primary to tertiary levels of the education system in the country which also applies to the state institutions (Nwosu and Micah 2017). However, the level of progress and success of the programme has been very slow. Researchers have attributed the slow pace of the progress of the programme to the numerous challenges ranging from inadequate resources (financial, materials and human) to lack of facilities (equipment, tools, machines, and consumables) that are needed for practical lesson delivery (Mima-Eyovwunu *et al.* 2020; Güngöri 2020; Akanbi 2017; Dokubo 2017; Zite and Deebom 2017; Nwosu and Micah 2017; Bisalla and Adeyemi 2016; Ayonmike, Okwelle and Okeke 2015).

Research findings have shown that VTE has the potential of making any nation become great through technological advancement and competitiveness with other nations (European Commission 2011). Acquisition of functional skills which is one of the primary objectives of VTE programmes is needed to face some of the challenges such as unemployment and insecurity in Delta State, Nigeria. Dike (2013) states with dismay the failure of the Nigerian government to attend to its vocational-technical education programmes for decades. This could be one of the reasons for the worrisome present state of vocational-technical education programmes in Delta State to the people of the state. The failure of the government in its duty to attend to this aspect of the education that has a major part to play in the development of the technology sector of the economy has had a devastating effect (Seyi 2014).

Wodi and Dokubo (2012) unequivocally state that the Nigerian educational system has remained academic and literary, producing graduates without functional skills. The observations made from their research in terms of functionality of VTE programmes in Nigeria are the same as some of the researchers

before and after them - all were pointing at the same issue of inadequacy of vocational-technical education programmes in Nigeria (Akanbi 2017; Dokubo 2017; Oluntope 2014; Okoye 2014; Lilly and Efajemue 2011). Recent research has indicated that the acquired skills of graduates of vocational-technical education programmes in Nigeria are inadequate for employment in the industries because of lack of necessary practical skills (Dokubo 2017; Iwele 2016; Oluntope 2014). This lingering educational problem in the education industry in Nigeria is a cause for concern as most of the graduates from liberal arts and VTE programmes are jobless and helpless even with their good results due to lack of necessary skills to be engaged in the labour market (Dokubo 2017; Akanbi 2017; Ogundele, Waziri and Idris 2014). VTE has been identified as the oldest form of education in the world and was meant to meet societal needs (Nwosu and Micah 2017; Katsande 2016; Roberts 1971 in Akpan, Usoro, and Ibritam, 2003). It is key to the growth and development of any nation technologically (Goyo and Sunday 2020). The European Commission, (2011) sees it as a means of preparing Europeans with the necessary skills to cope with the demands of the age and to compete globally with other countries of the world technologically. VTE is designed to prepare people for different kinds of available occupation within the community in which they live. It assumes different nomenclature in different places, but its purpose remains the same. The practical nature of the content of VTE programmes made it special and unique from other educational programmes. The required skills for any given trade are the same all over the world, irrespective of geographical location, religion, race, and cultural heritage of the people where such trade can exist (Abdul-Azizl, Zulkifli Nashir, and Karim 2020; Triki 2010). It is an education offering with limitless boundaries in terms of age, race, social status, level of intelligence and abilities. It is in categories and levels which determine the entry requirements. Entry requirements in terms of age and paper qualification(s) across the globe mainly depend on the type of trade and level. All the trades are graduated from low to a very high level which accounts for varying requirements for entry into the same trade at different levels. For instance, the entry requirement for an artisan is different from that of the technician, technologist and professional of the same trade/profession. Eichhorst *et al.* (2014) state that VTE is a silver bullet to youth joblessness and a valued alternative beyond the core of general education. Its relevance varies significantly from country to country based on need, level of development, perception, and value system. Therefore, countries with similar cultural heritage and value systems may fall under the same group that may have similar VTE programmes of the same nomenclature. Transfer

of technology from one country to another will be easier and effective if the two countries involved fall into the same group that have similar culture and value systems.

The problem of unemployment is global, but its intensity may vary from country to country (Eichhorst *et al.* 2014). For example, the study of UNESCO in collaboration with various countries within the globe indicated that there is no country without unemployment. The findings of UNESCO in 2018 show that Brazil with a total population of 209.3 million people had unemployment rate of 12.8%; unemployment rate in China was 4.6%; Chile's unemployment rate stood at 6.9% and that of Kenya was 11.5%. The unemployment rate in Israel as of 2017 was 4.2% and its total population was 8.9 million (UNESCO-UNEVOC 2019). According to UNESCO (2019), the unemployment rate in Nigeria as of 2016 was 17.0% with a total population of 185.96 million people. As of August 11, 2020, the population of Nigeria was 206.66 million (Worldometer 2020). This is so because of the level of development which differs from country to country. Usually, it is expected under normal conditions that the percentage of unemployment in developed countries should be less than that of the developing countries. In developed countries such as the United Kingdom, there is an enabling environment for people to be engaged in one form of activity or the other that could yield them income. This accounts for a lot of people being self-employed, thereby reducing the rate of unemployment. As for developing countries such as Nigeria, the environment is not conducive for the unemployed to become self-employed (Nwogu and Nwanoruo 2011). The situation is worsened with multifarious challenges: lack of constant power supply, lack of good roads, insecurity, lack of vocational skills, and poor governance (Oviawe 2017; Ayonmike, Okwelle and Okeke 2015). Therefore, the rate of unemployment in Nigeria cannot be compared with that of the United Kingdom (Ogundele, Waziri and Idris 2014). The social status of a nation can also contribute to the level of unemployment. For instance, there are certain jobs that people do for a living in the United Kingdom that cannot be done in Nigeria due to cultural variation and provision of social amenities. Job creators should, therefore, bear in mind the nature of the environment, cultural heritage, and value system of the people before venturing into creating certain kinds of job(s) in any given geographical location within the globe. In Delta State, Nigeria, the power supply is one of the major challenges facing the state and any business that will depend solely on power may not survive there.

Countries with similar cultures may fall into the same group that can have similar VTE programmes. The nature of training and available trades in those countries are likely to be the same. Job mobility of

beneficiaries/recipients of VTE within such countries that are under the same group will be higher when compared with other countries from a different group. It, therefore, follows that a workable VTE programme in each country may not be successful in another country of different social-cultural heritage. Globally, VTE programmes can be classified into five distinct systems: vocational technical schools, vocational training centres, former apprenticeships, dual apprenticeship system combining school training with a form-based approach, and informal-based training (Eichhorst *et al.* 2014). All VTE programmes in all the countries in Africa and beyond operate under one or more of the above-named distinct systems. Some countries operate a single system approach in their VTE offering, while others operate a dual system of combining classroom training with apprenticeships in firms.

2.5 State of VTE Programmes in Delta State

The position of VTE programmes in the state is complex, affected by many internal and external factors. In terms of externality, there are influences from political, social, economic, and cultural factors (Ogundele, Waziri and Idris 2014). Political factors such as a change in government with corresponding changes in programmes and priority in terms of budgeting and execution of educational projects may have slowed down the progress of VTE programmes in Delta State (Umunadi 2013). Socially, the programmes are viewed as for those who are not academically sound (Nwosu and Micah 2017; Onwueme and Ugbor 1994) and have lower social status when compared with general education programmes (Akanbi 2017; Emike, Bassey and Ushie 2013; Wodi and Dokubor 2012).

The programme is capital intensive and requires a lot of money for the building of standard workshops and purchase of tools, equipment, and consumables for practical activities (Zite and Deebom 2017). Shortage of funds is one of the setbacks the programme is experiencing in Delta State (Ogundele, Waziri and Idris 2014; Ayomike, Okwele and Okeke 2015; Ojimba 2013). The cost of delivering effective and efficient VTE programmes is high and requires collaborative efforts of government and non-governmental organisations (Akanbi 2017; Oviawe 2017; Oluntope 2014; Serumu 2015).

Culturally, some of the vocations are limited to specific genders due to cultural beliefs (Abdullahi 2017; Robbin 1992). In Delta State, certain vocations such as catering, and nursing are seen and believed to be for females; while metalwork, woodwork and automobile mechanics are seen and believed to be vocations for males. Cultural belief is one of the factors that is affecting VTE programmes in Delta State in terms of choice of trade/vocation. The inculcated belief in the children by their parents that vocations

are gender-specific has affected their choice of vocation. It looks odd to some people to see a male in a vocation that was believed to be for females to those who still hold on to the belief in gender specifics for a vocational career. In the same way, it looks odd to some people to see a female in those vocations that are believed to be for males (Robbin 1992; Akpan, Usoro and Ibiritam 2003; Akpotohwo and Ehimen 2014).

2.6 Chapter summary

The survival of any nation in this fast technologically growing world to a large extent is dependent on the level of its technological advancement and development (Ogundele, Waziri and Idris 2014). Vocational technical education is the bedrock of technological growth and advancement and its neglect will have devastating effects on the nation. (Seyi 2014; Okoye and Arimonu 2016; Ogundele, Waziri and Idris 2014). This chapter looked at VTE in Delta State, Nigeria from the pre-colonial to the post-colonial era and highlighted some of the major challenges facing it at the various developmental stages. The next chapter will consider the review of literature on VTE programmes in Nigeria which applies to Delta State.

Chapter Three

Literature Review

3.0 Introduction

This chapter is set out to review literature published by professional authors that relates to VTE programmes. The review shall include but is not limited to reports from textbooks, journal articles, and newspapers publications, speeches in conferences, seminars, and workshops. The researcher visited some libraries in the United Kingdom such as the British library, Coventry University library, and Warwick University library in addition to Anglia Ruskin University library to search for relevant textbooks and journals. Several searches were done on the net using google scholar to search for relevant literature on VTE in Nigeria and in other countries. The researcher also visited other databases in search for relevant literature. These databases include Connecting REpositories (CORE), Bielfeld Academic Search Engine (BASE), ERIC Search, PubMed, PsychInfo, and African Journals Online (AJOL).

The African Journals Online accessed is a database that has contextually relevant quality research publications from Africa that addressed the challenges of Africans in the areas of health, education, climate change and under-development. It was stated in AJOL platform that the database is one of the largest platforms of African-published scholarly journals. It was also stated that the database was created to increase global and continental online access, awareness, quality and use of African-published, peer-reviewed research. In addition, the data base acknowledged that it is not a publisher, but a journal aggregator platform for millions of site visits all over the world. The database features journals from 32 countries out of 526 African journals.

From the site of the database, the countries are Algeria, Benin, Botswana, Burkina Faso, Cameroon, Congo Republic, Coted'Ivoire, Egypt Arab Rep., Eritrea, Eswatini, Ethiopia, Ghana, Kenya, Lesotho, Libya, Madagascar, Malawi, Mauritius, Mozambique, Nigeria, Rwanda, Senega, Sierra Leone, South Africa, South Sudan, Tanzania, Togo, Tunisia, Uganda, Zambia, Zimbabwe.

The search terms that were used revolve around the following areas which formed the subheadings of the chapter:

- Theoretical framework
- Application of Prosser's Sixteen Theorems

- VTE versus general education
- VTE programmes in Delta State
- VTE programmes in other countries versus Nigeria
- VTE as a tool for youth empowerment
- Philosophy of VTE in Nigeria
- Vocationalism and employability
- Skill acquisition and retention
- Curriculum of VTE programme in Nigeria
and its implementation
- Facilities and infrastructures
- People's perception(s) of VTE in Nigeria.
- Gender issues in VTE in Nigeria.

3.1 Theoretical framework

Adamu (2000:1) states that “Changing economic, social and political situations in both developed and developing countries have combined to create needs for constant innovations and reforms in education”. In Europe, 2010 marked the end of the ten-year Lisbon Strategy of reform which identified vocational education and training (VET) as an important programme that would usher in the knowledge economy (Katsande 2016). In the same way, Nigeria has made several attempts to restructure its educational system to reposition the country's VTE programmes with a view of meeting the needs of the society. This gave birth to the first indigenous national policy on education in 1977 and was revised in 1981, 1987, and 2004 respectively (Oyeleke and Akinyeye 2013; Wodi and Dokubo 2012).

However, the educational reforms made no difference as researchers in the field have observed from their studies that the VTE programmes are not meeting the needs of the society. The reasons advanced were that there are lots of challenges affecting their effective implementation. When critically examined, it appears that some basic requirements for the establishment of VTE programmes are compromised. This was the motivating factor that made the researcher to consider the adoption of Prosser's Sixteen Theorems in his theoretical framework. The theory was considered appropriate as it states the bases for the establishment of VTE programmes. The theory states thus:

1. "Vocational education will be efficient in proportion as the environment in which the learner is trained is a replica of the environment in which he must subsequently work" (Prosser and Quigley 1949:1)
VTE programmes comprise of two main components which are theory and practical. The practical component is carried out in a workshop. The workshop environment should be the same as that of the industry where the trainees are likely to be employed. Therefore, the trainees that would be employed on graduation would easily fit into the industry and discharge their duties as employees. The workshop environment comprises of tools, machines, equipment, space, and light. These should be the same with those that are found in the industries. Akanbi (2017) attributed the poor learning outcome of VTE trainees in Nigeria to poor learning environment of the VTE institutions. This implies that there is a relationship between learning environment and learning outcome. Therefore, the VTE learning environment should not only be a replica to those of the industries but should also be conducive for effective teaching and learning to take place.
2. "Effective vocational training can only be given where the training jobs are carried on in the same way with the same operations, the same tools and the same machines as in the occupation itself" (Prosser and Quigley 1949:1). This theorem is advocating for the use of experienced VTE trainers who are well exposed to practical activities. Similarly, the trainers should be proficient in the use of relevant modern tools, equipment, and machines to facilitate teaching and learning activities. The VTE institutions are, therefore, duty bound to equip the VTE workshop with the same facilities that are found in the industries where their graduates are to be engaged on graduation as employees. The training of VTE trainees in their various fields with the same tools and machines as found in the industry would place them in a better position to secure job easily in the industries in their areas of specialisation. The performance of VTE trainees who were trained with relevant tools and equipment that are used in the industry of similar vocation would be different from the performance of those trained in the absence of such facilities. Therefore, it is important for VTE trainees to be equipped with the same skills needed in their given trades.
3. "Vocational education will be effective in proportion as it trains the individual directly and specifically in the thinking habits and the manipulative habits required in the occupation itself" (Prosser and Quigley 1949:1). VTE institutions have different departments and fields of specialisation where

individuals are enrolled. The emphasis here is that trainees should be equipped with specific skills that are needed to function effectively and efficiently in their chosen fields. This should be in addition to general skills which may cut across other fields. The trainees should also be equipped with critical thinking skills that would help them to proffer solutions to emerging issues that may arise in their various fields (Gilchrist 2020).

4. "Vocational education will be effective in proportion as it enables each individual to capitalize his interest, aptitudes and intrinsic intelligence to the highest possible degree" (Prosser and Quigley 1949:2). The implication of this theorem is that the trainees' interest, aptitudes, and intelligence should be considered in their placement into various trades. It is not enough to accept or admit trainees into any vocational trade based on interest without due consideration to the intellectual capabilities of the individual to cope with the demands of the trade. The intellectual demands of vocational trades vary and should be taken into consideration during screening of candidates to be admitted into the various trades for effective progression in the assigned trade/vocation. There is, therefore, need for the involvement of vocational counsellors in the allotment of trainees into the various trades. Prospective VTE trainees seeking for admission into VTE higher institutions should be made to understand the requirements to be admitted into the various trades or fields/areas of specialisation. They should also be advised to choose at least three trades or areas of interest and other options where they are willing to be admitted. The counsellors should then take into consideration the past academic records of the candidates and the requirements of the various trades in the screening and selection of candidates into the various vocational fields for the benefits of the candidates. When these procedures are followed, it will lead to the admission of the right candidates into the right vocational trades for effectiveness and efficiency. It would also reduce the rate of dropout (attrition rate) of trainees from the programme. According to Dokubo and Dokubo (2013), lack of interest of VTE trainees is one of the challenges of the programmes in Nigeria. Zite and Deebom (2017) state that one of the challenges of VTE is the admission of rejected students from other disciplines into the programme. This act of admitting students into the programme without due consideration of their interest and intelligence to cope with given trade is against this theorem and would affect the performance of the students.

5. “Effective vocational education for any profession, calling, trade, occupation or job can only be given to the selected group of individuals who need it, want it, and are able to profit by it” (Prosser and Quaigley 1949:2). The implication of this theorem is that VTE programmes should be for only those who have need of it and are able to pass through the training rigours involved in the theoretical and practical aspects of the training programme. It is an absurdity to persuade those who were not able to secure admission into other educational programmes into VTE programmes without due consideration of their interest and intellectual capability to cope with training that is involved to succeed in the programmes (Zite and Deebom 2017). Emike, Bassey and Ushie (2013:8) state that “It is generally believed that vocational technical education is meant for the dropout and never-do-well in academic work”. It therefore implies that vocational-technical education is given to the right calibre of people which could be responsible for poor service delivery that has been observed by Nwosu and Micah (2017).

6. “Vocational training will be effective in proportion as the specific training experiences for forming right habits of doing and thinking are repeated to the point the habits developed are those of the finished skills necessary for gainful employment” (Prosser and Quaigley 1949: 2). This statement implies that the practical aspect of the training programme should be carried out in such a way that the trainees are equipped with relevant skills in their chosen fields to function as a productive worker. The training should be such that the trainees would get use to the activities involved and are able to repeat such activities on their own with ease. The essence is mastery of the subject matter which is the practical proficiency in each area of specialisation. To achieve this, considerable quality time should be given to the practical training of the trainees to ensure mastery and competency.

7. “Vocational education will be effective in proportional as the instructor has had successful experience in the application of skills and knowledge to the operations and processes, he undertakes to teach” (Prosser and Quaigley 1949:2). This theorem implies that VTE trainers should be those who are qualified and competent in the theoretical and practical aspects of the field they would be engaged to teach. This becomes necessary as you cannot teach what you do not know. It is, therefore, an absolute absurdity to engage any teacher who does not have the practical knowledge and experience in the field which he or she is engaged to teach. Teachers’ qualification and experience should be

considered very important in the recruitment of VTE trainers. Dokubo (2017) states that one of the challenges of VTE programmes in Nigeria is that the teachers are not properly trained in the practical component of their vocation. This could be due to lack of training facilities in VTE higher institutions where they are trained in the country (Akanbi 2017; Okoye and Arimonu 2016; Serumu 2015; Yaro and Cheledi 2012; Nwogu and Nwanoruo 2011). Oviawe (2017) attributed some of the problems of VTE programmes in Nigeria to lack of practical demonstration. It, therefore, implies that the trainees that are being trained by these trainers shall also experience lack of proper training.

8. “For every occupation there is a minimum of productive ability which an individual must possess to secure or retain employment in that occupation. If vocational education is not carried to that point with that individual, it is neither personally nor socially effective” (Prosser and Quaigley 1949:2). This theorem shows that there is a relationship between skill acquisition, productivity, and time in occupational proficiency. For VTE institutions to train proficient workers needed by the industries, there should be proper training for a reasonable period that would allow for acquisition and retention of necessary skills in various occupations. VTE trainees should therefore be given adequate training that would prepare them for the world of work in their various areas of specialisations.

9. “Vocational education must recognise conditions as they are and must train individuals to meet the demands of the “market” even though it may be true that more efficient ways of conducting the occupation may be known and that better working conditions are highly desirable” (Prosser and Quaigley 1949:3). It, therefore, implies that the immediate community should be involved in the programme at various stages (planning to implementation). The immediate community should not be isolated from the planning of the curriculum of a programme that is meant to meet their needs. The needs of the society should be considered in the designing of the programme and course offerings and the training of trainees should be geared towards available opportunities in the country and beyond.

10. “The effective establishment of process habits in any learner will be secured in proportion as the training is given on actual jobs and not on exercises or pseudo jobs” (Prosser and Quaigley 1949:3). This statement shows the importance of practical training on actual jobs in a real, live situation. For example, using a working engine to teach trainees on engine timing and allowing them to perform the exact practical with the engine. Teaching engine timing theoretically without practical demonstration

with a working engine is against this theorem. Therefore, it should be mandatory that every practical activity should be carried out in a real-life situation and not on pseudo jobs.

11. “The only reliable source of content for specific training is an occupation is in the experience of masters of that occupation” (Prosser and Quaigley 1949:3). This theorem is emphasising the importance of the involvement of industries and experienced VTE specialist in the curriculum planning and review of VTE programmes. The course contents of the various fields of the programme should reflect that which will equip the trainees with exact knowledge and skills needed to function in the existing fields of their study.

12. “For every occupation there is a body of content which is peculiar to that occupation and to which has practically no functional value in any other occupation” (Prosser and Quaigley 1949:3). This theorem is on the need of drawing the contents of VTE programmes field by field to reflect the specific skills needed to be acquired in the various fields of specialisation. The theorem is advocating for emphasis on the subject matter rather than on general knowledge that has little or no bearing with any given field. Therefore, contents of VTE programmes should focus on technically related courses rather than on general and unrelated fields.

13. “Vocational education will render efficient social service in proportion as it meets the specific training needs of any group at the time that they need it and in such a way they can most effectively profit by the instruction” (Prosser and Quaigley 1949:3). This theorem is emphasising the meeting of the needs of trainees and society at a given period. This implies that VTE programmes should be flexible and not rigid. Therefore, the contents should include critical thinking, applied knowledge, and trouble-shooting skills which would enable the recipients to adapt to future employment changes which may arise in their areas of specialisations (Gilchrist 2020).

14. “Vocational education will be socially efficient in proportion as in its methods of instruction and its personal relations with learners it takes into consideration the particular characteristics of any particular group which it serves” (Prosser and Quaigley 1949:4). This theorem is focusing on the trainees of VTE programme and the society that will need their services. The characteristics of the trainees should be considered and matched with the available occupations where they will be engaged to render their services to the society. The above criteria should be used to guide trainees into the best

occupation that they are suitably qualified to fit into and progress in. The success of VTE programme is judged by the output which is the graduates of the programme. The performance of VTE graduates depends on the extent to which they have learnt and mastered the subject matter, which will depend on their interest, aptitudes, and abilities to cope with the training rigours. Therefore, the characteristics of VTE trainees is an important factor to be considered for the programme's effectiveness and efficiency.

15. "The administration of vocational education will be efficient in proportion as it is elastic and fluid rather than rigid and standardized" (Prosser and Quigley 1949:4). This theorem has the implication of administrative flexibility within the framework of sound standards that support good vocational education instead of keeping to rigid and inflexible plans. The efficiency in the delivery of VTE programmes will depend on the flexibility of the administrator to adapt to changes of programmes considering changing employment requirements that would yield better results. Administrative bottleneck could affect effective delivery of VTE programme, hence flexibility in its administration is being advocated by Prosser in this theorem.

16. "While every reasonable effort should be made to reduce *per capita* cost, there is a minimum below which effective vocational education cannot be given, and if the course does not permit this minimum *per capita* cost, vocational education should not be attempted" (Prosser and Quigley 1949: 4). VTE programmes are capital intensive when compared to general education programmes that do not require workshop and sophisticated tools, machines, and equipment. The additional cost of delivering VTE programmes lies in the building of workshops and built-in facilities that are needed for practical activities. The minimum cost of building workshops and equipping them with the required tools, machines and equipment needed for the training of trainees should be made available if VTE programmes are to be mounted. The stand of Prosser in this theorem is that VTE programmes should not be attempted without provision of the minimum amount of money that is required to set up standard workshops that are equipped with required facilities for effective programmes' delivery. Establishing VTE programmes against the above theorems would lead to programmes' failure in the achievement of the main goal of producing a productive workforce to feed the industries and meet the needs of the society.

3.2 Application of Prosser's Sixteen Theorems

The application of Prosser's Sixteen Theorems is considered under four main factors: Training environment; Funding; Interest, aptitudes, intrinsic intelligence, and characteristics of trainers and trainees; and Flexibilities.

3.2.1 Training environment: Vocational education programmes involve practical demonstration of theoretical concepts. Therefore, the programmes have two main components which are theoretical and practical components (Okolie *et al.* 2019; Onwenonye 2015). The programmes are meant to meet the varying needs of the society as earlier stated in this study (see chapter one). To achieve this primary objective of satisfying the needs of society, the environment in which the training should be carried out must be conducive and responsive to the changing demands of the programmes due to changes in demands for goods and services. The training environment comprise of all that are needed for effective delivery of the programmes and it includes: buildings, machines, equipment, tools, consumable materials, space, and lighting (Oludeyi 2015). The conduciveness of the training environment at any given time would be determined by the training requirement needed to equip trainees for the world of work at that time. It, therefore, implies that the training environment of VTE programmes should be upgraded from time to time to meet the required standard for effective and efficient programmes delivery.

The industries produce and supply goods and services needed by the society and the VTE graduates are trained to work in the industries to meet the needs of the society. The training of the trainees of VTE programmes should, therefore, be carried out in an environment that should be the same as those of the industries where they will be engaged as employees on graduation (Odu 2007). The need for the training environment to be a replica of the environment in which the trainees will work on graduation is essential as it will not only equip them to work in the industries but will also equip them with the necessary skills needed to function as professionals in their various vocations as experts in the fields and able to establish as an individual provider of goods and services to the society. For individuals to be competent in any given vocation, they must be trained "...directly and specifically in the thinking habits and the manipulative habits required in the occupation itself" as stated in theorem 3 of Prosser's Sixteen Theorems (Prosser and Quigley 1949:1). The trainees should therefore be equipped with the "...right habits of doing and thinking" (Prosser and Quigley 1949:6) to the level of mastery where they become

proficient. The achievement of equipping trainees with the right skills to the level of mastery would require the engagement of competent qualified trainers in the delivery of the programmes.

3.2.2 Funding: Vocational education is capital intensive; hence the issue of funding is very important for its effective delivery. The provision of funding should not be below the minimum that is required for the provision of needed facilities which includes building, machines, equipment, tools, consumables for practical activities, maintenance of facilities, and payment of personnel. Most of the identified challenges of VTE programmes revolves around funding inadequacy (Mima-Eyovwunu *et al.* 2020; Zite and Deebom 2017; Bisalla and Adeyemi 2016; Okoye and Arimonu 2016; Ayonmike, Okwelle and Okeke 2015; Serumu 2015). Theorem 16 of Prosser's Sixteen Theorems on Vocational Education states thus: "while every reasonable effort should be made to reduce per capita cost, there is a minimum below which effective vocational education cannot be given, and if the course does not permit this minimum per capita cost, vocational education should not be attempted" (Prosser and Quigley 1949:4). It is, therefore, necessary to ensure that the funds that are made available for the implementation of VTE programmes are not below the minimum that is required for procurement of needed tools, equipment, machines, consumables, building of standard workshops and for payment of personnel to meet the requirement of funding as stipulated in theorem sixteen of Prosser.

3.2.3 Interest, Aptitudes, Intrinsic intelligence, and Characteristics of trainers and trainees: Vocational education programmes are meant to meet the needs of society through the graduates of the programmes. To achieve the objectives of VTE programmes, the needs of the graduates must be met and attempting to meet the graduates' needs, their interest, aptitudes, intrinsic intelligence, and personal characteristics as stated in theorems 4, 5, 13 and 14 of Prosser's Sixteen Theorems should be considered. Consideration of the needs of the trainees in admitting them into the programmes for effectiveness and efficiency should not be compromised. These factors will help in the public awareness creation on the importance of VTE programmes that would lead to careful selection of trainees into the programmes for the achievement of the goals and objectives of the programmes.

3.2.4 Flexibility: There should be flexibility in maintaining of standards on the part of the administrators of VTE programmes to meet the goals of the programmes which is meeting of the changing needs of the society. The insatiability of human wants because of changes in taste and fashion leads to the

change in their demand for goods and services which affects the labour market. Consequently, the labour market changes in terms of supply of goods and services required by the society. It is thus expected that VTE programmes should be responsive to the changes of the needs of the society which it is meant to serve; and this has implications on the programmes and methods of its administration. Therefore, industries, trainers and trainees should be flexible and receptive to changes and innovations. Trainers should devise new methods of delivering the programmes for effectiveness and efficiency. The trainees should be receptive to new methods that may be adopted by trainers for maximum benefits and knowledge acquisition. The industries should be responsive to market demands in its provision of goods and services to meet the needs of the society. In addition, the industries should be innovative to introduce new goods and services to the society to buy and should not only concentrate on old patterns of production of goods and services. The above statement can be achieved when there is flexibility in the administration of VTE programmes to equip the graduates with necessary skills to feed the industries. The changes in demand for goods and services by society has the implication of the need for curriculum adjustment of VTE programmes. The inevitability of curriculum adjustment of VTE programmes places a demand on the government to see the need for constant review and restructuring of the VTE curriculum to meet the current and anticipated future needs of the society globally. Therefore, the ideas of Prosser that were summarised in the above main factors are important to the current study in mitigating the challenges of VTE programmes and bridging the existing gap between acquired skills of VTE graduates and that needed by the industries.

3.2.5 Literature on Prosser's Ideas: Literature published on Prosser's ideas include Snow (2012); Odu (2007); Reynaldo and Martinez Jr (2007); and Doolittle and Camp (1999). Snow (2012) carried out a study on 'An Assessment of Student Performance in Career and Technical Education Programs and on Core Academic Subject Areas' which was based on Prosser's ideas. Snow (2012:17) states that "Charles Prosser was considered the father of vocational education in the United States". Odu in his paper entitled 'Causes and Control of Wastage in Vocational Technical Institutions' itemised the philosophy of VTE based on Prosser's ideas. In addition, the paper publication of Reynaldo and Martinez Jr (2007) on 'An Evolving Set of Values-Based Principles for Career and Technical Education', was also based on Prosser's ideas. Reynaldo and Martinez Jr (2007:73) state that "In 1925 Charles Prosser and

C. Allen published *Vocational Education in a Democracy* which contained Prosser's Sixteen Theorems for vocational education. These theorems served as the first published set of principles that served as guidelines for the design, development and implementation of vocational education". Also, in the publication of Doolittle and Camp (1999) on 'Constructivism: The Career and Technical Education Perspective', the work of Charles Prosser was mentioned as one of the major researchers whose established theoretical framework still guides career and vocational education programmes.

Prosser was an experienced vocational and career education theorist who is well known for his Sixteen Theorems on Vocational Education (Snow 2012). He was also an experienced researcher who worked with different researchers in the field of vocational and career education (Reynaldo and Martinez 2007; Doolittle and Camp 1999). According to Snow (2012), Charles Prosser was the first federal commissioner for vocational education in the United States. Snow (2012:18) states that it was when Charles Prosser was secretary to the National Society for the promotion of industrial education that he "...helped passed legislation for vocational education". From literature reviewed, Prosser had a lot of experience in the field of vocational and career education. He was an administrator and the first director of Dunwoody Industrial Institute which was founded by William Hood Dunwoody. The Institute was an educational Institute that help trainees to discover and follow a vocational career that suits their individual characteristics. His experience as a vocational administrator and a researcher could be responsible for his sixteen theorems to remain valid in the field. None of the sixteen theorems has been proved to be less important nor to be invalid for decades (Snow 2012). However, there may be need for extension to address some of the issues that were raised in the sixteen theorems of Prosser to support but not to replace.

3.3 Vocational Technical Education Versus General Education in Delta State, Nigeria

According to Akanbi and Jekayinfa (2019), Nigeria became a nation in the year 1914 when the colonial masters amalgamated the Southern and Northern Protectorates under the leadership of Sir Frederick Lugard. Delta State is one of the 36 states in Nigeria, and it is comprised of different ethnic groups with diverse cultural heritage. Each culture has their cultural norms and values system, such as dressing code and manner of greeting which differentiate them from each other. The state is divided into 25 local government areas with a local government chairman as the political leader of each of the local government areas. According to Adeyeye and Mason (2020), African has its unique indigenous

knowledge and practice, which is known as African Indigenous Knowledge (AIK). As Africans, Delta State has its own indigenous education pattern which is vocational in nature. The VTE programme of Deltans had an element of general education in it even before the advent of the colonial masters. The indigenous VTE programme in Delta State is used to prepare their citizens with knowledge and skills needed to function as productive and active members of the society. The indigenous VTE in Delta State has an element of general education in it as the present VTE does. The VTE programme is used to prepare individuals for specific occupation based on the individuals' interest, aptitude, and capabilities (Gilchrist 2020). The general education is used to train and build members of the society on the societal norms and values irrespective of their sex and vocational choice. The general education is transmitted at home by parents and family members and at the community level by various age grades and peers. The general education is continuous as members of the community are being taught and reminded of their civic duties from time to time. It is interesting to note that the indigenous general education programme is in levels as to what is taught in one age grade differs from what will be taught in the next age grade due to differences in roles performance or the roles that are required to be performed at the various age grades. Deltans make use of the AIK to preserve their cultural heritage for continuity (Adeyeye and Mason 2020).

The present VTE programme has a component of general education imbedded into it. The general education component is being delivered by the General Studies (GS) department in the various VTE higher institutions in the state. The GS department offers a range of courses which are made compulsory and are called core courses such as English Language. Some of the courses such as History, are called elective courses which are not compulsory. Trainees choose which of the electives to register for and attend classes. General education is therefore an integral part of VTE programmes in Delta State.

3.4 VTE programmes in Delta State

In Delta State, VTE programmes operate under two distinct systems: vocational technical schools and informally based training. The vocational-technical schools comprise of Technical Colleges, Mono-technics, Polytechnics, Colleges of Education (Technical), Universities of Technology and Regular Universities with faculties of education that house vocational-technical education programmes. Informally based training are vocational education programmes that are being delivered in an informal setting. The training programmes are practically based with little attention to theoretical

aspects of the programme. The lack of theoretical training that is inherent in the informally based vocational training is one of the distinguishing characteristics of the programme from that of the vocational-technical schools. Similarly, there are no standard entry qualifications to the various available trades (vocations). In addition, there are no written examinations and paper certification at the end of the training programme and the principal sources of training is the home and the apprenticeship system (Bisalla and Adeyemi 2016). Each training centre is manned by a master craftsman. The goals of the training programme are to train practically oriented trainees to meet the vocational needs of the society in the areas of manufacturing of equipment for farming such as hoes, cutlasses, and local implements for weeding of grasses; repairs and maintenance of household equipment; and replacement of the master craftsmen in their various trades for continuity. It is the oldest form of vocational education in the state and is still in operation in most of the trades such as furniture making, carpentry, meson, block moulding, painting, and automobile repairs (Nwosu and Micah 2017).

Nevertheless, the focus of this study is on the vocational-technical schools, known as vocational-technical education which is now in vogue (Diara and Christian 2013). This educational programme is categorised under lower and higher levels. The lower level of VTE programmes is offered at the various technical colleges in the state to work as technicians either on their own as self-employed or in the industry as employee in their field of study. The researcher focused on the higher level of the VTE which is the level that produces a high-level manpower needed to manage the industries and to train future vocational-technical experts that would train others for continuity. At the higher education institutions (HEIs) in Delta State, there are four categories of VTE programmes in operation: universities, colleges of education, polytechnics, and mono technics. The polytechnics and the mono technics train their students to work in the industries or to become self-employed. In comparison, the universities, and the colleges of education train their trainees to teach in the polytechnics, mono technic, technical colleges. In addition, VTE graduates from universities and colleges of education can work in the industry or practice on their own as engineers for those with university degree or as technologist for those with Higher National Diploma (HND) which polytechnics offer to their trainees that meet the requirements of the award. However, the functionality of these VTE programmes in terms of preparing their trainees with functional and relevant skills that are needed to discharge their duties has been challenged by some researchers in the field (Aina 2020; Gilchrist 2020; Allen 2020; Okolie *et al.* 2019; Nwogu and Nwanoruo

2011). The trainees of VTE programmes are not exposed to the world of work (Oviawe 2017). The non-exposure of trainees to the world of work could be due to the use of trainers who were not properly trained as stated by Dokubo (2017). The lack of proper training of VTE trainers is traceable to the neglect of the programme by the government which is solely in charge of the programme in Nigeria (Olaitari 2015), and the neglect has resulted to poor learning outcomes due to poor learning environment (Akanbi 2017). Okolie *et al.* (2019) state that VTE trainees attain theoretical content knowledge ability but lack professionalism and generic skills. The lack of professionalism and generic skills account for the skill gap of what the trainees possesses and that which is needed by employers of labour (Goyo and Sunday 2020). Allen (2020) states that VTE institutions in Nigeria are not demand driven.

3.5 VTE programmes in other countries compared with Nigeria

The European Union through the European Commission Act saw the need to revisit their VTE to meet the needs of society (European Commission 2011). The Commission held meetings with stakeholders from the industries and those from the education sector to discuss how to improve the various aspects of the existing programmes to achieve the maximum result. The deliberations between the Commission and the stakeholders among other things included improvement in the quality of training and development of courses relevant to the needs of the employers of labour and the society in general. There is need for the Nigerian government to consider meeting with the VTE stakeholders on how to improve the quality of training and development of relevant courses that will prepare VTE trainees for the labour market. The need for improvement of the training offered to VTE trainees has become necessary as the VTE higher institutions in Nigeria are presently facing challenges in developing a competent workforce and sustained economic growth in the global economy (Okolie *et al.* 2019; Dokubo 2017).

In some parts of Europe, work-based learning was adopted to achieve the goals of functional VTE programmes to meet the needs of the society (European Commission 2011; UNESCO 1989). However, in Nigeria, vocational technical institutions operate in isolation from the industries in which the trainees are meant to serve on graduation (Okoye 2014). Therefore, the need to involve industries fully in the training programmes of the trainees should be a welcome development as identified in this current study as part of the solution to the problems affecting the success of the programmes in Nigeria.

Switzerland is another country with a unique VTE programme that is worthy of emulation. The country does not have natural resources and resorted to making education an important resource to their nation. Their educational system is well structured, and their VTE programme operates under the apprenticeship system that lasts for about two to four years (Gilchrist 2020). The training period depends on the kind of trade that is involved. The training is being carried out by a company or an organisation and is done side by side with the academic programme. The programme is organised in such a way that the trainees can attend mandatory lectures in a college for at least one or two days a week. In addition to this, most companies also provide classes for their trainees. In so doing, their trainees are made to become well-grounded in the theoretical and practical aspects of their trade (Gilchrist 2020). The nature of this training affords the trainees on graduation the opportunity of either starting a job or joining other schools for further education (Ark 2015). Unlike Switzerland, VTE programmes in Nigeria do not have such provision of allowing their trainees to attend practical training in the industry side by side with their training in their various institutions which are theoretical in nature.

VTE programmes in the United States of America are wide, complicated, and cut across various grades, subjects, and educational institutions. The complex system of VTE programmes is divided into four main areas: high school, two-year colleges, on-the-job training, and apprenticeships (Kreying 2001). This system in practice keeps the United States' VTE programmes improving and moving from one level to another in a progressive manner of preparing people for work and further education (Gilchrist 2020).

The greatness of the United States of America is traceable to their proactive response to VTE programmes (Gilchrist 2020; Gordon 2003). In the United States of America, VTE is called Career Technical Education (CTE) and it is used to boost the economy. Gilchrist (2020:38) states that “CTE programmes make education relevant and vital by not only putting individuals to work to achieve success in many ways but also providing a skilled labour force to enable America to maintain its place in a global economy”. Wodi and Dokubo (2012) state that, in 1917, a federal law otherwise known as the Smith-Hughes Act was passed to make it compulsory for funds to be provided for VTE programmes. The programmes were federally funded in response to the observations of the employers of labour in the country. Wodi and Dokubo also cited South Korea as another good example of a country where VTE programmes contributed to making it a great nation in terms of technological development and

advancement. After independence in 1945, the country re-organised its school curriculum with an emphasis on science and technology education.

In the same way as that of the United States of America, Australia's Technical and Vocational Education and Training (TVET) is structured to meet the needs of the students (trainees), employers, and that of the society (UNESCO-UNEVOC 2018). According to Misko (2006), Australia, the United Kingdom and Germany have common general principles and training policies which are centred on how to provide industry relevant training for their VET trainees. There is need for Nigeria to examine its VTE institutions with a view of restructuring the programmes as literature have shown that its VTE programmes are void of necessary skills to meet the needs of the trainees, industries, and that of the society (Mima-Eyovwunu *et al.* 2020; Dokubo 2017; Odo *et al.* 2017; Ayonmike, Okwelle and Okeke 2015; Serumu 2015).

Similarly, Japan is another example of a country with well-developed VTE programmes that are notable in the world. After World War II, the Japanese adopted the American model of education that is made up of Pre-primary, Primary, Secondary which comprises of lower secondary schools, upper secondary schools with technical colleges, and Higher Education which comprises of universities and graduate schools. They also have Junior college, special training schools and miscellaneous schools. These formed the major types of publicly supported schools in the country (Shoji and Sam 1993). It was also noted that Japan after World War II in 1945 said that they were not destroyed by the Americans but by technology and vowed to develop their technological sector which they did by investing in vocational-technical education programmes (Wodi and Dokubo 2012). The Ministry of Education in Japan coordinates the review of its vocational-technical education programmes and issues a new course of study with written detailed guidelines on each subject that is being taught in elementary schools and secondary schools based on the input of various committees which comprise of experts and stakeholders.

This made the country's educational system different from that of America and Nigeria. Changes in taste and fashion coupled with technological advancement call for the constant review of vocational-technical education offerings at various levels to meet societal demands. Vocational education programmes in Nigeria at all levels seems to be isolated from the industries into which they are meant to feed and from the society in which they operate (Serumu 2015). The varying needs of the society in the areas of housing, electrification, transportation, agriculture, storage facilities and entertainment are not being met

in Nigeria because of poor programme offering in the country. Proper channelling of this programme to meet societal needs should be of priority to any nation that has its citizens at heart. Historically, vocational-technical education is education for work which should be functional in the society in which it operates (Chris and Lindsay 2015). Ayonmike, Okwelle and Okeke (2015) advocate for adequate funding, training and retraining trainers, adequate internal and external supervision, public-private partnership, adequate planning and implementation of programmes offerings, adequate provision of instructional materials and provision of scholarship/grants for teachers as improvement strategies to curb the challenges of vocational-technical education programmes and ensure quality delivery.

The Nigerian educational system is patterned the same way as that of the British and is like that of Japan in terms of structure but not in functionality. Presently, education in Nigeria takes the following pattern: Pre-primary, Primary, Junior Secondary, Senior Secondary and Higher Education. In Nigeria, vocational education is embedded in the curriculum of the Pre-primary where children are introduced to technology education through the use of toys; Primary schools where they are taught craft and made to produce useful valuable items with locally sourced materials as part of their subject offering, Junior Secondary where they are introduced to Basic Technology - a subject that cuts across various trades such as Basic Electricity, Building, Wood Work, Metal Work and others as electives. At the Senior Secondary School level, they are made to take specific trade subjects such as Automobile, Bricklaying, and Wood Working. At the Higher Education level, they are made to become professionals in their various areas of specialisation. Those that were successful in furthering their career in higher institutions would become professionals in their various fields either as engineers or as educational consultants in their areas of specialisations. However, the functionality of vocational subjects in the various segments leaves much to be desired because of challenges (Mima-Eyovwunu *et al.* 2020; Nwosu and Micah 2017; Zite and Deebom 2017; Idris and Mbudai 2017; Okoye and Arimonu 2016; Serumu 2015).

3.6 Vocational Technical Education as a Tool for Youth Empowerment

Vocational-technical education (VTE) is an educational programme that equip trainees with the required knowledge and skills that are needed to solve technological and social problems. It assumes different nomenclature such as technical vocational education and training (TVET), vocational education (VE), vocational education and training (VET), career education (CE), career and technical education (CET), technical and vocational education (TVE). However, the aim and purpose of the programme irrespective

of its nomenclature remain the same all over the world (Gilchrist 2020; Allen 2020; Nwosu and Micah 2017; Zite and Deebom 2017; Dokubo 2017). It is the oldest form of educational programme in the world that remains relevant to human existence (Nwosu and Micah 2017). It can only be restructured but cannot be phased out as it remains a veritable tool to meeting the continuous changes of human needs (Allen 2020). The usefulness that is inherent in the programme has sustained its relevance. The perception of the programme accounts for the differences in its definition by different authors as earlier stated in chapter one. Besides the different definition and perception of the programme, there is a converging view of it as a programme that is meant to meet the needs of the society locally, nationally, and internationally (Gilchrist 2020;). According to Allen (2020:273), “A nation cannot develop without well-equipped technical and vocational institutions or centres for the training of youths and women on practical skills that will yield development in such a nation”.

VTE is the educational programme that would be used to equip trainees with employability skills that was advocated by Coonan and Pratt-Adams (2018). According to Gilchrist (2020), CET programmes can prepare trainees and provide them with the needed skills to attain their required jobs. VTE programmes could therefore be used as a tool for youth empowerment. The majority of Nigerian youths are jobless because of lack of skills needed by the employers of labour (Goyol 2020). Mahmood (2014) in Okolie *et al.* (2019:5) state that “...the Central Bank of Nigeria noted that over 70% of the unemployed youths in Nigeria lack the right skills required by the labour markets”. Unemployment, according to Jwasshaka and Fadila (2020:36), is “...the inability of a graduate to earn a living through paid job from either the government or the private sector after graduation from school. Nigeria is one of the developing nations of the world that is faced with the issues of graduate unemployment which may be attributed to graduates lack of up-to-date workforce skills”. However, it would take a well-equipped VTE institution with a functional and effective programme to deliver the skills needed by graduates to be employable and self-reliant. Jwasshaka and Faila (2020:36) further stated that “Developed nations like Canada, Australia, Germany, Singapore, and Japan have reaped the benefit of Technical, Education and Training to become global leaders in all aspect of their enterprise in a very short space of time. But Nigeria is bedevilled with mass graduates’ unemployment because of lip services paid to skill acquisition programs”. VTE programmes could be used to empower Nigerian youths if the government should equip

VTE institutions in the country with all that it takes to deliver an effective and efficient programme that will equip trainees with the relevant skills to function in the world of work.

Employers of labour need high-level skills (effective communication, team working, and problem-solving) which VTE programme offers through its general education and vocational skills training (Okolie *et al.* 2019). These skills would be delivered with functional VTE programmes (Mima-Eyovwunu *et al.* 2020). Functional VTE programmes are those that are offering courses that are relevant and are in demand in the labour market. According to Gilchrist (2020:40), “The courses offered must be able to teach the skills that can be applied to the careers that are in demand”. As for Goyol and Sunday (2020:1), “The skills gap that exist between the graduates of technical colleges and the industries has limited the employability of the graduates of technical colleges in Nigeria. The causes of the skills gap have been traced to poor funding, inadequate infrastructure and facilities in the technical colleges...”.

3.7 Philosophy of VTE in Nigeria

Philosophy is “a particular set or system of beliefs resulting from the search for knowledge about life and the universe” (Homy 2000 in Odu 2011:168). Philosophy is the foundational beliefs of people which they accept to be their norms and goals to be pursued. It is also what informs their way of life.

Prosser (1949) in Odu (2007) states that the philosophy of VTE includes the following:

1. The productiveness and efficiency of vocational-technical education and training lie in the training of the recipients in a real-world of work environment that is devoid of every form of artificiality. The trainees should be acquainted with the use of the right tools, equipment and machines that are needed in the day-to-day practical activities in their various chosen trade or career.
2. Another way to measure the effectiveness of vocational education includes individual direct training in the benchmarked occupation.
3. There should be a direct relationship between training and work environment. This will make a fresh graduate that secures a job in his field feel at home in the workplace as the work environment is very much like the training environment in terms of machines, equipment, and tools.
4. A standard should be maintained in terms of entry requirement and experience that is required to be qualified for training in each field/trade. This initial requirement will serve as a foundation and building

block for the training of the trainees as they progress from the known to the unknown that would lead to the acquisition of new knowledge.

The philosophy of vocational-technical education is derived from the national goals of the nation. The Nigerian educational philosophy is based on:

The development of the individual into a sound and effective citizen, the full integration of the individual into the community and the provision of equal access to educational opportunities for all citizens of the country at the primary, secondary, and tertiary levels both inside and outside the formal school system (Federal Republic of Nigeria 2004:7).

The philosophy of education as stated above seems to be fit for purpose and should have been able to provide a sound footing for a workable education system. Ironically, a country with such a good philosophical education ideology has an epileptic education system. Literature has it that the educational system of the nation (Nigeria) has failed to meet the needs of the learners and that of the society at large (Odo *et al.* 2017; Okoye and Arimonu 2016; Mamman 2013; Yaro and Cheledi 2012).

The Nigerian (2004) edition of its National Policy on Education (NPE) states that VTE is understood to be: an integral part of general education; a means of preparing for occupational fields and effective participation in the world of work; an aspect of lifelong learning and a preparation for responsible citizenship; an instrument for promoting environmentally sound, sustainable development; and a method of alleviating poverty (Federal Republic of Nigeria 2004:30). There is a need to investigate the probable cause(s) of the problems that are facing the education industry in Nigeria seeing that the country is aware (Okoye and Nkanu 2020) that its education system is failing to serve the purpose it is meant to serve (Okoye 2014).

The policy statement also states that the goals of vocational-technical education shall be to:

...provide trained manpower in the applied sciences, technology, and business particularly at craft, advanced craft, and technical levels; provide the technical knowledge and vocational skills for agriculture, commercial and economic development; and give training and impart the necessary skills on individual who shall be self-reliant economically (Federal Republic of Nigeria 2004:30).

Judging by the goals stated above and the current state of VTE programmes in Nigeria, it may be difficult to believe the assertion made by some researchers that the programme is a failure.

Nwafor (2014) states that Nigeria does not have a specific philosophy of education. However, from the National Policy on Education (2004), it was very clear that the nation has its specific philosophy. However, the transformation of the philosophy into a workable educational programme is another issue. The National Policy on Education document as enshrined in the above philosophical statements is appropriate and would boost VTE programmes in the country if fully implemented. The implication of the philosophy of VTE programmes in Nigeria is that all VTE programmes should be functional and should equip recipients with relevant transferable skills needed in the world of work.

The theoretical and practical aspects of VTE programmes should be taken very seriously for effective service delivery. However, the practical aspect of the programmes seems to be neglected with chains of numerous complaints that range from lack of funds, infrastructure, to qualified technical personnel (Nwosu and Micah 2017; Okoye and Arimona 2016; Ogundele, Waziri and Idris 2014).

3.8 Vocationalism and employability

Vocational education is meant to train individuals for useful living in the world of work as either an employee or an employer of labour. The concept of vocationalism and employability which was derived from vocational education has to do with vocation and employment. The world we live in is activity-based and requires a well-coordinated effort to organise and group some activities into course offerings. Groups of course offerings that are well selected can be combined to form a vocation. It takes a great deal of talent to be able to do this (Coonan and Pratt-Adams 2018). Vocational education, therefore, needs people who are creative and innovative enough to create more vocational courses and to improve on the existing ones. Coonan and Pratt-Adams (2018) state that the skill industrial strategy required for graduates from various fields of study should include creative and innovative skills which encompass transferable skills and meta-competencies. These skills are imbedded into VTE programmes, but its practicability is lacking due to lots of factors affecting the effective implementation of the programme (Chinedu-Ali *et al.* 2020; Aina 2020). This all-important educational programme has not been given the full attention it deserves from the Nigerian society in which it is meant to serve (Nwosu and Micah 2017). It has been wrongly perceived by the public which has led to depriving it of the best brains it needs to deliver (Loo and Jameson 2017). Unemployment and under-employment problems have made vocationalism and employability an issue of national and international concern.

The devastating effects of unemployment and under-employment in Delta State, Nigeria, to individuals and society, in general, are enough reasons to critically investigate the challenges of VTE and the way forward. The issue of the inability of young graduates to establish or secure employment in relevant industries was what led to the consideration of the development of employability skills (Bourner, Greener and Rospigliosi 2014). Bourner, Greener and Rospigliosi (2014) in their research into graduate employability and propensity to learn in employment, observed criticism on the introduction of employability skills in the university curriculum. There is a claim that it reduces the morale of university education in its primary purpose of general knowledge acquisition by some researchers (Bourner, Greener and Rospigliosi 2014). Employability skills are viewed as narrowing down the knowledge of university students. The challenge of Bourner, Greener and Rospigliosi (2014) was that the development of employability skills in university education may not make any difference in solving the problem of graduate unemployment. Bourner, Greener and Rospigliosi (2014) offered the following reasons to support their stand:

1. There has not been any statistical evidence to show the workability of the concept as a means of curbing or solving the university graduates' unemployment problem. They stress that research that were carried out in the past by other researchers are pointing out that those that were given this kind of skill training were not better employees than those that were trained under the regular university training programme. It then means that the impact factor was zero and not encouraging. However, this may not be the same in some countries and should not be used as a reason to drop the idea of employability skills in university education. Bourner, Greener and Rospigliosi (2014) believe that there may be some factors that might have affected those research findings which implies that the idea of the introduction of employability skills in university education should not be written off.
2. It was also observed by Bourner, Greener and Rospigliosi (2014) that the introduction of employability skills in university education worsen the chances of graduates' employment of those that embraced it. The researchers referred to other researchers whose findings reveal that graduate employers favoured those graduates from universities that did not implement employability skills more than those that did.
3. Bourner, Greener and Rospigliosi (2014) observed from the findings of other researchers that employers of labour rated different skills as employability skills such as willingness to learn, commitment, dependability/reliability, self-motivation, teamwork, etc. And were not in agreement in their identification

and rating. So, employability skills are not well defined (Cannon 1986 in Bourner, Greener and Rospigliosi 2014:8).

4. Bourner, Greener and Rospigliosi (2014) from their study believe there is no need for the development and introduction of such skills into the university course offering. They argued that the skills can easily be developed by non-graduates and can be acquired through experience in the place of work.

5. Enforcement of these skills (employability skills) in the university may involve introducing the skills as a new course or including it into existing courses which may increase the workload of the students.

6. Bourner, Greener and Rospigliosi (2014) argue that it was not correct to believe that these skills are better learned in the school than in the industries.

The claim of Bourner, Greener and Rospigliosi (2014) that they have not been able to discover any research findings to support the development and inclusion of employability skills into the training programme of the university for graduate training, suggest that they agree with the idea of not including employability skills into the university graduate training programmes as a means of solving graduate unemployment problems, as employers would usually train graduates employees on the employability skills that are needed for them to function in the various industries in which they will be employed (Bourner, Greener and Rospigliosi 2014).

However, the views of Nwogu and Nwanoruo (2011) were that the trainees of vocational-technical education programmes should be equipped with vocational skills to enhance their employability on graduation. Similarly, Okolie *et al.* (2019) state that skill development is very important for employability of graduates. Okolie *et al.* (2019) further stressed that the enhancement of graduates' employability is a priority for many Higher Education (HE) stakeholders. Nwogu and Nwanoruo (2011) identified lack of skilled manpower, inadequate training facilities and equipment, lack of entrepreneurship education and poor emphasis on the practical training as part of the major challenges of vocational-technical education programmes. From the results of other researchers reported above, it would be safe not to generalise the findings of Bourner, Greener and Rospigliosi (2014) as there are works of literature that support the equipping of university graduates with prerequisite skills in their chosen vocation to curb unemployment and to function effectively and efficiently in the world of work (Dokubo 2017; Oviawe 2017; Okoye and Arimonu 2016). EMIKE, Bassey and Ushie (2013:8) state that "Technical institutions were meant to train technicians and technical teachers who will manage the industries and technical schools". According to

Coonan and Pratt-Adams (2018), Higher Education (HE) should equip their trainees (students) with employability skills needed by the industries for job readiness. Recent research findings have shown that Higher Education Institutions (HEIs) and employers of labour have seen the importance of employability skills (Nghia *et al.* 2020; Okolie *et al.* 2019). Okolie *et al.* (2019:5) state that there is "... need for urgent actions by HE policy makers and HEIs to ensure that thousands of graduates produced yearly in Nigeria possess technical skills and the generic skills required by today's industry and labour market".

3.9 Skill acquisition and retention

The uniqueness of VTE and its potential of solving societal problems around employment and social-economic inequalities was recognised by UNESCO in its training programme plan 2010 - 2015 (Majumdar 2013). Skill acquisition and retention are all about how proficiency is achieved and sustained. It was advocated by Majumdar (2013) that individuals should be given initial training that is beyond their required level of proficiency to reduce future training requirements. In addressing the issue of skill acquisition and retention, the relationship between proficiency required and the consequent training resources that are required should be taken into consideration by the trainers. Skill acquisition and retention are also about how proficiency is achieved or lost. Training is the major element in skill acquisition and retention. Skills can only be acquired through training which could be direct or indirect (Akhueomonkhan and Raimi 2013). The need for training and retraining of VTE trainers is essential for the achievement of the programme goals and objectives. According to Gilchrist (2020), the professional development of CTE trainers is very important and should be tailored to the teacher's subject area of specialisation. Gilchrist (2020) stressed that CTE teachers should be knowledgeable in their subject's areas and be equipped with all the up-to-date technology which the programme is using.

Training increases proficiency and the proficiency of a trainer increases his or her training capabilities. Training should, therefore, be continuous until maximum proficiency is achieved. It should also commence when the maximum proficiency needed in the performance of a given job by a professional in that field is noticed to have dropped significantly. The level of proficiency will drop when training/retraining is neglected. The rate of skill acquisition and skill decay is to a large extent determined by the level of proficiency (Udofia *et al.* 2012).

3.10 Curriculum of VTE in Nigeria and its Implementation

The curriculum entails all the experiences of learners which are provided by the school to aid learners to achieve required learning outcomes, goals, and objectives to the best of their ability (Umoru 1999 in Umunadi 2013). It is an educational programme with three major components: programme of study, the programme of activities and programme of guidance. It contains aims, goals, detailed course outline, and objectives, list of learning activities and evaluation procedures.

The present curriculum of the VTE programme in the Nigerian educational system is designed to prepare learners for useful living within the society (Federal Republic of Nigeria 2004). The vocational-technical education programme has always reflected in all the Nigerian education systems' curricular reforms: 6-5-2-3; 6-3-3-4 and 9-3-4 (Wodi and Dokubo 2012). Despite the various curricular reforms in the Nigerian education system, the problems of VTE programmes remain unabated (Oranu 2003).

Oranu (2003:18) suggests that workshops should be organised "...for administrators at the federal and state ministries of education on the meaning, scope, and nature of VTE programmes" in Nigeria. This suggests that the administrators of educational programmes from the ministry of education that oversees the implementation of the programmes are not well informed of the nature and importance of the programmes. Research findings have shown that the implementation of VTE programmes in Nigeria is poor (Ogundele, Waziri and Idris 2014). The results of the study also supported existing literature in the field that poor implementation is one of the major problems of VTE programmes in Nigeria (Wodi and Dokubo 2012; Ayonmike, Okwelle and Okeke 2015).

3.11 Facilities and infrastructure

The effectiveness and achievement of the goals and objectives of any educational programme will only be feasible when the necessary facilities and infrastructure are put in place (Zite and Deebom 2017). Facilities and infrastructure are, therefore, vital instruments for the effective delivery of VTE programmes (Nwosu and Micah 2017). Akhuemonkhan and Raimi (2013) state that training facilities of VTE programmes should be standard and functional for the preparation of trainees to fit into the industry at the end of their training programmes as employees. They emphasised the importance of the provision of the necessary facilities for the programmes to meet the requirements for effective training of trainees to serve the industries and the public. In addition, Oluntope (2014) observed that infrastructural facilities are essential in the implementation of any educational policy. The nature of VTE programmes is such

that adequate facilities and infrastructure are needed for the achievement of their goals and objectives. It is, therefore, not just the availability of facilities and infrastructure but their adequacy. The criteria for judging the adequacy of facilities and infrastructure as far as VTE programmes are concerned includes their quantity, quality, and functionality. Anything short of that is adjudged to be inadequate (Audu *et al.* 2013).

Infrastructural facilities are those sets of interconnected structural elements which enhance development, and they are referred to as equipment and materials in the field of vocational-technical education (Ajibola 2010 in Olutope 2014). This includes buildings (workshops), machines, tools, working materials such as sheet metals, wood, consumables such as emery-cloth (sandpaper) glues and other adhesives. All the things that are needed for the functionality of VTE other than the organisational and managerial function of human resources fall under facilities and infrastructure. Human resources and material resources are the two major components that are needed for the achievement of any VTE programme. Human resources are needed for the organisation of the material resources to achieve the set-out goals and objectives of the programmes. So, the availability of necessary materials without the effective and efficient management of the materials will lead to a colossal failure of the entire programme. Therefore, the need for the recruitment of experienced qualified personnel and provision of adequate functional facilities and infrastructure are essential as far as VTE programme is concerned (Mima-Eyovwunu *et al.* 2020; Akanbi 2017; Okoye and Arimonu 2016; Ayonmike, Okwelle and Okeke 2015).

3.12 People's perception of vocational-technical education in Nigeria

Poor perception, misconception, and interpretation of this educational programme by many Nigerians is traceable to the era of colonialism and the introduction of western education to serve the immediate need for clerks and interpreters (Ogundele, Waziri and Idris 2014). By the time the colonial masters realised and saw the need for vocational-technical education, the people had already embraced their asymmetrical western education that is void of vocational skills. The educational programmes, that were introduced at that time, only trained people for white-collar jobs which are viewed to be better than the blue-collar jobs that vocational-technical education programmes have to offer to its recipients. Moreover, their initiation of VTE could not fit into the existing liberal curriculum and the students saw that the programme will give them a slim chance of getting white-collar jobs which are viewed as a sign of being an educated person with respect and regards in the society. Students and parents from that time until

the present day still hold to the view that vocational-technical education is an educational programme that is meant for those who could not succeed in purely academic programmes and are, therefore, prepared for blue-collar employment in a society where upward mobility depended on purely academic careers (Dike 2013; Ogundele, Waziri and Idris 2014).

3.13 Gender issues in VTE in Nigeria

Gender could be one of the ways of marginalizing individuals and depriving them from accessing and exercising leadership (Bailey-Morrissey and Race 2019). VTE programmes have a place for both males and females in all the trades at the various levels of the course offering. It is not supposed to be gendered selective; hence the consideration of gender issues become necessary. Vocational-technical educators in higher institutions in Delta State, Nigeria comprise of males and females and are found in the Colleges of Education, Polytechnics and Universities.

However, the number of females found in most VTE trades in all the higher institutions in Delta State are few when compared with males. The reason for this may not be far from the fact that VTE is considered by lots of people to be mainly for males (Robbin 1992). In the same way as VTE is viewed, leadership is also perceived to be for males and any female leader is seen as an 'outsider' (Schein 2001 in Bailey-Morrissey and Race 2019). VTE programmes are open for everyone that is interested, ready to learn and to profit from it irrespective of gender. However, members of the society on their own decided to label some vocational trades as either for male or female trades. The public negative perception could be responsible for the view of those that see it to be gender discriminating in terms of choice of trades (Robbin 1992). Robbin (1992) states that in the United States, females were prevented by law from going into VTE programmes before the Education Amendments in 1972 and the Vocational Education Acts in 1976. The Education Amendments of 1972 and the Vocational Education Acts of 1976 have removed the legal denial of women from being involved in VTE programmes. Some of the females that should have benefited from the programmes were denied the opportunity. The few females that sustained their interest in the programmes were discriminated against either in the choice of trade/specific areas of specialisation or in job opportunity (Abdullahi 2017; Braig 1997). These are the reasons why UNESCO is vigorously carrying out the campaign of equal rights and access to education. Gender equality in Nigeria seems to be a difficult issue to be resolved due to cultural beliefs and practices. In Nigeria, there are specific roles to be performed within the family and the society by males

and females according to the culture of the people (Akpotohwo and Ehmen 2014; Howell 2002). Although the Nigerian constitution is against gender discrimination, it has not been easy for them to change their belief that males and females are equal and have equal rights in society (Abdullahi 2017). Similarly, women in Nigeria find it difficult to exercise equal rights with their male counterparts due to cultural barriers which UNESCO has given itself to address (UNESCO 2003/2004).

In Canada, there is gender discrimination in the assigning of certain duties in some professions despite the training received as a professional to perform such duties irrespective of gender. This was observed by Lajeunesse *et al.* (2000) in a study they conducted in Canada. The correctional service of Canada appointed cross-gender monitor of staff and inmates which was conducted by Lajeunesse *et al.* The result of the study reveals that some of the male staff were being discriminated against in the performance of their duties which they were trained to carry out without restrictions. Equally, in the Nigerian Prison Service, which is also a correctional service, it was also observed that there is gender discrimination as staff were being discriminated because of their gender while discharging their duties as professionals (Obeagu and Ama 2003 in Onwenonye 2012). Gender discrimination is, therefore, not peculiar to Nigeria as there are cases in other countries such as Canada. The concentration of males in some given trades such as carpentry, mason (brick laying) and metalwork in Nigeria is because of the cultural beliefs of the people that such trades are solely meant for males. In the same way, catering, hairdressing, and a few other trades in Nigeria are dominated by females. Traditionally, culture affects the choice of a trade by individuals based on their sex in Nigeria (Akpotohwo and Ehmen 2014). The findings of Ogundele, Waziri and Idris (2014) show that vocational-technical education in Nigeria before the advent of the colonial masters was gender-sensitive as there were specific vocations that were meant for males only, as well as some that were meant for females only as earlier stated. Akpotohwo and Ehmen (2014) state that gender discrimination is very high in vocational-technical education programmes in Nigeria due to cultural and societal norms.

3.14 Chapter summary

The chapter stated the theoretical framework of the study which was based on Prosser's Sixteen Theorems on Vocational Education. The relevance of the theorems to the study was elucidated with supportive evidence from previous studies. The history of VTE in Nigeria was traced from the pre-colonial to post-colonial era. Vocational-technical education and general education was considered. Similarly,

VTE programmes in Delta State was fully discussed. Equally, VTE in other countries such as United States of America, and United Kingdom versus Nigeria were also discussed. Vocational-technical education as a tool for youth empowerment was investigated. The philosophical underpinning of VTE in Nigeria were clearly stated. The relevance of the concept of vocationalism and employability to VTE programmes was established. In addition, skills acquisition and retention was important to VTE trainees. The curriculum of VTE programme in Nigeria and the level of its implementation were examined. Facilities and infrastructures were seen to be inadequate in VTE higher institutions in Delta State. It was observed that people's perception of VTE programmes in Nigeria remain negative as it has been viewed as education for those who are not academically sound. Furthermore, gender issues in VTE in Nigeria were examined. The next chapter shall consider the methodology and the methods adopted in the conduct of the study.

Chapter Four

Methodology

4.0 Introduction

The chapter is devoted to the methodological approaches adopted by the researcher in the conduct of the study. It also contains a vivid account of the methods that were explored to achieve the objectives of the current study that led to its addition to the existing body of knowledge. Research methodology is a systematic way of solving research problems (Kothari 2004). A methodology chapter is important in any research study as "...it produces the (philosophical) basis for claims for the methodological production of knowledge and the use of particular methods" (Willmott 2020:1). In the conduct of this study, the researcher gave "equal importance to 'rigor' and 'relevance'" as advocated by Willmott (2020:1). Following the philosophical underpinning of the study, which is post-positivism, the researcher carefully and thoroughly examined the views of the respondents of the study on the factors affecting effective delivery of VTE programmes using appropriate data gathering and analytical tools which were explained under the data analysis section in this chapter.

According to Katsande (2016), methodology is the paradigm that underpins any research. It is also the framework that contains the processes that were followed in the conduct of any research (Creswell 2018). Katsande (2016:92) states that research design is "...the plan of action that links the framework to specific methods". Methods are the techniques employed to collect and analyse quantitative or qualitative data of any study. The research question that guided the study and the underpinning philosophy of the study led to the choice of the use of a mixed methods approach.

This chapter considers the research ethics and procedures that was followed in the conduct of the study. It gives the detailed explanation of the design of the study, and referred to the goals of the study, background information, and research questions which were clearly stated in Chapter one. Furthermore, vivid explanation of the theoretical directions underpinning the methodologies is given. The validity, reliability, dependability, and trustworthiness of the study are justified. In the same way, the population of the study and sampling methods are stated. In addition, the process of data collection and data analysis are all included and discussed in the chapter.

4.1 The Design of the Study

The researcher adopted mixed methods research design for the study as it involves the collection and analysis of qualitative and quantitative data, integrating them in a single study (Creswell 2007). Holden and Lynch (2004) state that qualitative and quantitative methodologies should be used to triangulate results in a mixed methods research study. Methods triangulation in a mixed methods study avert bias which is common with the use of single methodology (Khalaf, Abubakr, Alenezi and Ziada 2021). Mixed methods according to Khalaf, Alenezi, and Ziada (2021:1), is the use of “both quantitative and qualitative data”. Therefore, the researcher’s adoption of methods triangulation in this current study is in support of existing literature in the field. The mixed methods design that was adopted is triangulation convergence model. The researcher adopted the design because the study is a single-phase study, where the qualitative and quantitative study was carried out within the same period. The qualitative and quantitative data were given equal emphasis (Creswell 2006). The results of both (qualitative and quantitative) were merged during the discussion and interpretation stage of the study. The researcher did that to draw valid conclusions and address the research objectives (Creswell 2006). Holden and Lynch (2004:14) state that “...a multi-method methodology leads to the convergent validation of research results through internal cross-checking”.

The researcher adopted the ontological approach in the conduct of the study, and the ontological position of the researcher was constructivism. Constructivism as an ontological position, asserts that social phenomena and their meaning are continually being accomplished by social actors which are in constant construction and revision. The constructivist aspect of ontology was adopted as the study relies on the perceptions and opinions of respondents who are social actors in the field of vocational-technical education. These respondents are from institutions that were established by people and managed by people who can influence changes on existing structures as the need arises (Seyi 2014; Rieglar 2012).

Interpretivism was also one of the studies’ paradigms as it “... is more sensitive towards individual meanings and contribution rather than being compromised through the positivism research philosophy. Interpretivism as a paradigm assumes that reality is subjective and can differ considering different individuals. Therefore, this can lead to the understanding that research participants would not provide general interpretations” (Alharahsheh and Pius 2020:42). So, it is the researcher’s duty to provide

general interpretations to the research findings in the light of existing literature in the field under study. According to Holden and Lynch (2004:13), what should matter to researchers should be "...the particular problems they have to deal with" and that the debate about ontology and epistemology are not relevant. However, this does not reduce the importance of the need for researchers to consider the nature of their study in the choice of their philosophical stance. Though "...there is no right or wrong philosophical stance" (Holden and Lynch 2004:12), there is an argument that "...with Hughes and Sharrock's words in mind, it is questionable whether a caution is warranted about a pragmatic approach, that is, applying methods that suit the problem rather than methods that suit ontology or epistemology concern" (Holden and Lynch 2004:13). However, it is proper for researchers to consider their ontological and epistemological stance considering the nature of their study to ensure that the methods used in addressing a problem were appropriate. The consideration of the nature of a study becomes necessary because the problem could be better addressed with an alternative philosophical stance. Philosophical stance should therefore not be discarded as every problem has its philosophical stance which best supports its investigation for better results. Holden and Lynch (2004:13) state that "...for various reasons such as past training and skills, researchers may have unthinkingly slotted themselves into an objectivist or subjectivist position, not realising that the methods of an alternative philosophy may suit their research problem better". This has made the need for philosophical review which can have double effects on researchers imperative. The double effects of research philosophy on researchers according to Holden and Lynch (2004:13) is that "...it may open their mind to other possibilities, therefore enriching their own research abilities; and it can enhance their confidence in the appropriateness of their methodology to the research problem which, in turn, enhances confidence in their research results". Holden and Lynch (2004:16) further emphasise that "researchers must bear in mind that 'what to research?' may have a major impact on methodological choice, therefore their philosophical review also engenders a reflection on the research problem". The researchers' philosophical stance for this study is therefore justified as it was appropriate to the research problem and the methodology adopted for the study.

4.2 Goals

Research processes are planned to achieve the set-out goals and objectives of the study. Therefore, the researcher clearly stated the goals and objectives of the study at the beginning of the research in

Chapter one. The necessary procedures to achieve the goals and objectives of the study were followed throughout the study as stated in this chapter.

4.3 Research Questions

The research questions that guided the study were stated in chapter one. Katsande (2016:105) citing Maxwell (2008), stated that there is "...need to elaborate on existing theory and knowledge and to be clear on what exactly is being investigated". Research questions should guide the study in generating answers to address the objectives of the study. In addition, the link between the research objectives and the research questions should be clearly shown. Literature reviewed for the study has indicated that there are number of factors affecting the effective delivery of VTE programmes in Delta State, Nigeria. The research questions were generated from the persistent challenges affecting effective delivery of VTE programmes. It was conspicuous from literature reviewed that the VTE programmes are not meeting the needs of the industries and that of the trainees due to the factors affecting its effective implementation (Aina 2020; Gilchrist 2020; Goyol and Sunday 2020; Okolie *et al.* 2019; Nwosu and Micah 2017; Dokubo 2017; Okoye and Arimonu 2016; Triki 2010). The above was demonstrated in the previous chapters (chapters one and two). Therefore, the study was in accordance with the recommendation of Maxwell in Katsande (2016) that what is being studied should be clearly stated.

4.4 Research Methods

The techniques and tools used in finding solutions to research are referred to as research methods. Research methods are grouped into three: qualitative, quantitative, and mixed methods (Creswell and Creswell 2018). The researcher employed both quantitative and qualitative methods in the conduct of the research, hence the introduction of mixed methods concept becomes necessary (Khalaf, Abubakr, Alenezi and Ziada 2021). The use of mixed methods was considered for this study to minimise errors from the use of one method (Palak and Walls 2009). In addition, it was considered the best way to address the objectives of the study and answer the research question. The researcher, therefore, considered the use of mixed methods appropriate to "...offset the weaknesses inherent in mono-method, qualitative or quantitative design" (Mamabolo and Myres 2019:102). The rationale for the use of mixed methods in this study is in support of Khalaf *et al.* (2021:2) which state that the use of mixed methods is "...to increase confidence in the findings and avoid potential bias arising from using a single

methodology”. The qualitative and quantitative elements in the mixed methods used by the researcher is in support of Fielding (2012).

The use of mixed methods for the study was justified with the generation of both qualitative and quantitative data at the same time in a single study (Creswell 2014). The researcher considered the use of mixed methods appropriate for the study as it supported answering the research questions from different angles. The mixed methods design that was used for the study is the convergent parallel design which involves collection and analysis of quantitative and qualitative data separately and merging the results for discussion and comparison (Palak and Walls 2009; Creswell and Clark 2011; Creswell 2014; Creswell and Creswell 2018). The results were triangulated. Triangulation according to Katsande (2016:102), is “...the procedures that are used to safeguard accuracy and alternative explanation”. The researcher adopted methodological triangulation to reduce errors that are inherent in mono method and to increase the trustworthiness of the findings (Noble and Smith 2015; Fielding 2012). Scott and Deirdred (2009:242) state that the use of “...multiple tools or methods to explore a phenomenon, are all examples of triangulation” which justifies its adoption in this study. In addition, Holden and Lynch (2004:14) state that “...research methodology writers urge researchers to use both quantitative and qualitative methodologies in order to triangulate results” and that was what was adopted in the current study.

Employing the qualitative process, the researcher conducted a standardised open-ended interview. Interview was considered an appropriate instrument for the collection of required data that would provide answers to the research question(s). It was a structured interview where each participant was asked the same set of questions to generate consistent and comparable data for analysis. The interview questions were open-ended, as the participants had the freedom to respond in their own words. The researcher adopted this approach to limit the rate of digression of participants from the focus of the study. The interview questions were detailed to maintain consistency and were designed in such a way that it would generate the data to address the research objectives and the research questions that guided the study. The interview questions were semi-structured.

Longhurst (2020:103) states that “A semi-structured interview is a verbal interchange where one person, the interviewer attempts to elicit information from another person by asking questions. Although the interviewer prepares a list of predetermined questions, semi-structured interviews unfold in a

conversational manner offering participants the chance to explore issues they feel are important”. Longhurst (2020) added that the semi-structured interview is one of the qualitative research methods adopted by most researchers. Other types of interviews are structured and unstructured interviews. A structured interview is rigid in approach as the researcher provides a set of questions to be answered by the interviewee. Therefore, the researcher determines the direction of the conversation and does not give room for interviewee to explore the topic in different direction. The interviewee is expected to only provide answer to the question(s) that would be posed by the interviewer. However, Brubacher, Timms, Powell and Bearman (2019) saw the approach of structured interview to be against the wish of interviewees who desire to be given freedom to be heard. Adopting this type of rigid approach may not address the challenges of VTE in Nigeria which has persisted for decades, hence the researcher did not consider its adoption. An unstructured interview is the type where there are no specific predetermined questions from the interviewer other than the topic under study. It is participant (interviewee) driven. The researcher does not determine the direction of the conversation as the interviewees are in full control and can discuss the topic from any direction they want. Adopting this method may lead to generation of data that may be beyond the scope of the study and to avoid that happening, the researcher considered it necessary not to adopt the approach.

As for semi-structured interview, it combines elements of structured interview by preparing some set of questions for the interviewee to answer and some elements of unstructured interview by giving the interviewee the opportunity to address the topic from their own perspectives other than that of the interviewer. The interviewer uses follow-up questions from the responses of the interviewee (respondents) to explore the topic under discussion from the interviewee perspectives and within the scope of the study. This flexibility gives room for detailed discussion of the topic, thereby providing more data to address the goals and objectives of the study. The follow-up questions were open questions which Brubacher, Timms, Powell and Bearman (2019:1) described to be the best interview approach as “...responses to open questions tend to be more accurate and complete than responses to closed questions”. The use of semi-structured interview as the instrument for data collection, would lead to the generation of rich data from respondents of the study (Maddocks *et al.* 2018).

According to Longhurst (2020:105), the semi-structured interview "...has some degree of predetermined order but still ensures flexibility in the way issues are addressed by the informant". The researcher adopted this method as it suits the theoretical directions underpinning the research methodology. For example, theorem 15 of Prosser's Sixteen Theorems states that "The administration of vocational education will be efficient in proportion as it is elastic and fluid rather than rigid and standardised" (Prosser and Quigley 1949:4). In addition, the researcher made use of follow-up questions by probing further to get more details from the responses of the respondents which is one of the characteristics of a semi-structure interview. Some of the probes were obvious as the researcher asked respondents to state the causes of the answer they gave as the challenges of VTE. However, some of the probes were less obvious because it involves perception and interpretation of the respondents to the factors affecting VTE delivery. The use of follow-up questions is justified by Scott and Deirdred (2009) who state that researchers should use it to probe further the responses of respondents in a semi-structured interview. Further probe of responses of respondents with follow-up questions gave them the opportunity to explain in detail their responses and clarify statements. Therefore, the objectives of the study, research questions and the literature that was reviewed for the study guided the researcher in the drafting of the standardised open-ended interview questions and the questionnaire that was used as the qualitative instrument for data collection.

Quantitative research methods provide more emphasis on interpretation and providing researchers with extensive ideas, looking at context, environmental immersions, and a depth of knowledge of concepts (Tewksbury 2009). The open-ended questions in the questionnaire that was used for the study as another instrument for generation of more data to support in the addressing of the research goals, objectives, and research questions, generated qualitative data. The qualitative data that was gathered with the questionnaire, was transformed into quantitative data by quantifying the themes that emerged into frequency and percentages as clearly stated in the next chapter which is data presentation and analysis. The transformation of the qualitative data into quantitative data was done by changing the qualitative codes into quantitative variables (Creswell and Creswell 2018). The quantifying of qualitative data that was generated with the questionnaire instrument through conversion of the data into frequency and percentage gave credence to the treatment of the qualitative data as quantitative data. One of the

characteristics of quantitative research methods is the focusing on the quantity of whatever it is that is being studied (Tewksbury 2009). The quantifying of the data collected and the numerical description of it, qualified the transformed data to be treated as a quantitative data and the use of percentages in the analysis of the data gathered with the questionnaire instrument justifies the approach as a quantitative research method and it is the researcher's methodological approach. The approach is in support of Brubacher, Timms, Powell and Bearman (2019) who quantified the themes that emerged in their study and analysed it as a quantitative data using percentages.

4.5 Theoretical directions underpinning the research methodologies

The theoretical framework underpinning the study were elucidated in chapter one. Theoretically, the study looked at the VTE programmes under three distinctive periods: pre-colonial, colonial, and post-colonial periods. The study adopted the following theoretical approaches: constructivism, interpretivist, and inductive. The theoretical framework of the study was based on Prosser's Sixteen Theorems on Vocational Education. The theory stipulated the conditions that should be met for the establishment of effective VTE programme that are fit for purpose and state thus: The training environment should be the same as the work environment; Training should be done the same way with the same tools that are used in the workplace; Trainees should be trained to acquire the necessary skills for the occupation of their choice; Trainees should be trained in a vocation where they have interest, aptitudes, and intrinsic intelligence; It should be given to only those that need it, want it and are able to profit by it; There should be sufficient practice to the point where mastery has been achieved; It should be delivered only by qualified and experienced trainer who had a mastery of the subject matter; Trainees should be given the required training to possess the minimum productive ability to function in a given vocation of their choice; Trainees should be trained to meet the demands of the market; Training should be given on actual jobs and not on exercises or pseudo jobs; Trainers should be those that have the theoretical and practical mastery of the vocation they will be engaged to teach; Trainees should be trained to possess the needed specific skills that are peculiar to their chosen vocation; The training should be learner centred; The trainees should be systematically guided into a vocation they are actually suitable to progress in; The administration of the programme should be flexible and dynamic and should equip trainees with adaptable skills that can be transferred; and finally, it should not be operated below the minimum capital

needed to procure the required facilities for its effective implementation. Detailed discussion of the Prosser's Sixteen Theorems was fully covered in chapter three (see 3.1 Theoretical framework).

4.6 Validity, Reliability, Credibility, Dependability and Transferability

According to Noble and Smith (2015), validity and reliability are terms commonly used in quantitative research. Validity is the extent to which a concept is accurately measured in a quantitative study, while reliability is the consistency in which an instrument measures what it is meant to measure (Heale and Twycross 2015). The uniqueness of qualitative study that differentiates it from quantitative study accounts for change in terminology usage but not in quality and relevance. The question of relevance of validity and reliability in qualitative research was answered by Noble and Smith (2015:34) who state that the "... terms are applicable with validity referring to the integrity and application of the methods undertaken and the precision in which the findings accurately reflect the data, while reliability describes consistency within the employed analytical procedures".

The alternative criteria for demonstrating rigour within qualitative research as recommended by Noble and Smith (2015) were followed by the researcher to ensure validity, reliability, credibility, dependability, and transferability of the study. These criteria are considered below: Truth value was ensured through recognition of the existence of multiple realities, outlining of personal experiences and viewpoints that may have resulted in methodological bias. The perspectives of respondents of the study were clearly and accurately presented. The researcher demonstrated reflexivity and reflection on his own perspectives in addition to representativeness of the findings in relation to the phenomena under study. Consistency – The researcher ensures consistency by maintaining a 'decision trail' (ensuring that decisions are clear and transparent). Auditability was achieved, as the researcher displayed transparency with clear description of the research process from the beginning of the study through the development of the methods and reporting of the findings of the study. Neutrality was also displayed by reporting findings and its applicability without being biased.

The researcher designed and incorporated methodological strategies to ensure the 'trustworthiness' of the research findings. The strategies utilized were: the accounting of personal biases, which may have influenced the findings of the study; acknowledging biases in sampling and ongoing critical reflection of methods to ensure sufficient depth and relevance of data collection and analysis; including rich and thick

verbatim descriptions of participants' accounts to support findings (see chapters five and six); data triangulation, whereby different methods and perspectives helped to produce a more comprehensive set of findings.

4.7 Population of the Study

The population of the study was comprised of trainers in vocational-technical higher institutions, trainees, and targeted employers in the state capital. Non-teaching staff were excluded from the study because they are not directly involved in the training of the trainees and may have little or no idea concerning the training programmes.

The population of a study supplies the sample and provides the conclusions/summary that emanates from the result that comes from the use of the sample (Hassan 2017). There are two types of population in research: target population and accessed population. The target population is that which comprise of all the people or things in each geographical location to be studied and from where conclusions will be made for the generality of the people/things within the geographical location based on the findings of the study. It is also called a theoretical population and has varying characteristics. The target population of the study was the sixteen higher education institutions (HEIs) in Delta State (see Table 1 below). The accessible population is that to which the researcher can apply the conclusion of the result of their study. It forms part of the target population. The accessible population is also called the study population from which researchers draw their sample (Hassan 2017).

Table 1: Higher Education Institutions in Delta State

Types of higher institution	Number
Universities	7
Colleges of Education	4
Polytechnics	3
Monotechnic	2
Total	16

Table 1 above shows four main categories of higher institutions in Delta State. The table displayed the types of higher institutions and the number of such institutions in the state as at 2017/2018 academic session. The universities are the highest training institutions that train and equip trainees with knowledge

and skills to feed the labour market. There are different courses that are being run by the universities to train and certify their trainees to be trainers in various institutions or to work in the industries as professionals or to establish on their own as self-employed to render services to the society in their areas of specialisations. The universities offer the highest educational qualification which is Doctor of Philosophy (PhD) in various fields. In addition, they offer Master of Philosophy (M.Phil.), Master of Science Degree (MSc.) single honour, Master of Arts (MA) Degree single honour, Master of Education (M.Ed.) Degree single honour, Master of Science Degree in Education (MSc.Ed.) double honour. At First Degree level, the university offers Bachelor of Science Degree (BSc.), Bachelor of Arts Degree (BA), Bachelor of Education Degree (B.Ed.), and Bachelor of Science Degree in Education (BSc.Ed.). BA and BSc are offered to those that registered for professional courses such as medicine, engineering, agriculture, law, and other courses that are not educational courses which are for those trained to be teachers. The Bachelor of Science Degree in Education (BSc.Ed.) and bachelor's degree in Education (B.Ed.) are offered to those who are trained to teach in various subjects and fields of human endeavours. Those with Bachelor of Science in Education and bachelor's degree in Education are trained teachers while those with Bachelor of Arts (BA) or Bachelor of Science (BSc) Degrees are not trained teachers but professionals in their areas of specialisations. However, some of the holders of Bachelor of Arts and Bachelor of Science Degrees do engage in teaching because of a shortage in supply of trained teachers and lack of employment opportunity in their fields.

Colleges of education are teacher training institutions that train teachers to teach in Primary and Post-Primary institutions. They teach the courses or subjects which they were trained to teach such as Basic Technology, Woodwork, Metal Work, and other technical courses for those in technical which is the focus of this study. As for those in education, they teach such subjects as Economics, Socio Studies, Mathematics, English Language, and other general study subjects depending on their areas of specialisation. Therefore, the College of Education is divided into two main categories: Regular College of Education and College of Education (Technical) train teachers to teach general course subjects or VTE subjects depending on their chosen fields.

The polytechnic and mono technic are higher institutions that train professionals to work in the industries as employees or to establish on their own as self-employed in their areas of specialisations. They do not have the mandate to train teachers. The polytechnics house different courses in different fields while the

mono technic train professionals in one field which they have the mandate to train (see section 3.4 for details on the differences of the higher institutions and their mandates). However, the focus of this study is on higher institutions that train teachers (trainers).

Table 2: The number and percentage of questionnaires administered and retrieved

Respondents	No. Administered	No. Retrieved	Percentage retrieved (%)
Trainers	13	13	100
Trainees	64	55	85.94
Employers	6	6	100
Total	83	74	89.16

The above table shows the number of questionnaires that were distributed to the various groups of the respondents of the study. It also showed the number that were retrieved from the various groups and the percentages, respectively. From the table, trainers and employers recorded 100% retrieval rate while trainees had 85.94%. The total number of questionnaires administered were 83 and the total that were retrieved were 74. Therefore, the percentage retrieval was 89.16%.

4.8 Population sampling methods/techniques

This is a systematic way of choosing a subset that will represent the population of a study. Several methods/techniques could be adopted in the sampling of respondents from a given population of a study (Miller *et al.* 2010). The choice of a method/technique depends on the nature of the study, time and available resources. The various methods/techniques of sampling are grouped under two main types - non-probability sampling and probability sampling (Hassan 2017).

Non-probability sampling is a technique where individuals have no equal opportunities in each selection. According to Hassan (2017), this population sampling method is useful for pilot studies, case studies, qualitative research, and hypothesis development. The selection of those that were used for this study was done using a purposive sampling method. This method is a non-probability sampling and is guided by the characteristics of the population and the study objective(s). Purposive sampling is also called judgmental, selective, or subjective sampling. The sampling method is useful when you have a targeted sample to reach out to within a short period and sampling for proportionality is not the main concern.

Purposive sampling is divided into seven: Maximum variation/Heterogeneous, Homogeneous, Typical case, Extreme/Deviant case, Critical case, Total population, and Expert sampling (Maddocks *et al.* 2018). Expert sampling is one of the purposive sampling methods that is used when there is a need to capture knowledge that is rooted in a form of expertise (Elmusharaf 2018; Etikan, Musa, and Alkassim 2016). The researcher adopted the expert purposive sampling as that would lead to the achievement of the goals and objectives of the study.

Eighty-three (83) respondents were used as the population sample of the study drawn purposively from the population and comprise of 64 trainees, 13 trainers and 6 employers (see Table 2 above). The 64 trainees and the 13 trainers were drawn from two government higher education institutions in the state that was used for the study. The researcher treated the data that were collected from the two institutions as one for purpose of analysis and discussion and anonymity, which was part of ethical consideration. In addition, descriptions of the institutions were avoided for purpose of anonymity. The sample size for the interviews was 19 and was comprised of 4 trainees, 10 trainers and 5 employers (see Table 3 below).

Table 3: The number and percentage of respondents interviewed

Status of respondents	Number of respondents	Percentage (%)
Trainers	10	52.63
Trainees	4	21.05
Employers	5	26.32
Total	19	100

The number of respondents that were interviewed from the various groups that were used for the study is shown in table 3 above. The total number of respondents that were interviewed was 19. Trainers were the highest number of respondents interviewed and the percentage was 52.63%, followed by employers with a percentage of 26.32% and trainees with a percentage of 21.05%.

4.9.1 Story of Journey to Nigeria for Data Collection

The researcher's story of journey from United Kingdom to Nigeria for data collection is part of the researcher's PhD journey which started in Nigeria. The researcher, therefore, deemed it necessary to start the story with the motivating factors that led to the decision of going to the United Kingdom for a

PhD programme in VTE. The decision was made from zeal and passion on how to find solutions to the challenges of VTE programmes which has persisted for decades (Aina 2020; Okolie *et al.* 2019; Chimezie 2012; Lilly and Efajemue 2011; Puyate 2008). The challenges were such that in every journal article or book on vocational education in Nigeria which the researcher accessed, there were reports of most of the challenges which revolved around skills deficiencies of VTE graduates, inadequate human, material, and financial resources (Dokubo 2017; Olaitari 2015; Ayonmike, Okwelle and Okeke 2015; Oluntope 2014; Wodi and Dokubo 2012; Nwogu and Nwanoruo 2011). The researcher then decided to travel to the United Kingdom after securing admission in January 2016 for a PhD programme and to conduct research on how to bridge the existing gap between the acquired skills of VTE graduates from Nigerian higher institutions and that which are required in the labour market. The reason for the skills gap was attributed to the challenges affecting effective delivery of the programme (Goyol and Sunday 2020; Allen 2020; Nwosu and Micah 2017; Akanbi 2017).

The researcher left the shore of Nigeria for the United Kingdom in January 2016. The journey was very interesting but not without challenges. The interesting part of the journey was that the researcher arrived in United Kingdom safely. The researcher left Onitsha in one of the Luxurious buses to Abuja a day to the date of departure. The Luxurious bus developed a fault on the way which led to delay on arrival at Abuja the following morning being the date of departure. The flight was to take off at noon and in order not to miss the flight, the researcher paid a taxi driver to drop him at the airport without waiting for other passengers. Before highlighting from the Luxurious bus, the researcher observed that his hand luggage containing textbooks and other personal effects has been exchanged with another passenger's hand luggage. To avoid further delay, the researcher handed over the exchanged hand luggage to the driver of the Luxurious bus with his mobile number and that of his sister in Nigeria to call should the passenger that exchanged his hand luggage return it.

The researcher arrived at Abuja International Airport where another delay was experienced with the airport authorities who eventually cleared the researcher to proceed for boarding. The researcher nearly missed his flight as he was the last to board the airplane as he was called from the point of checking to join the flight. As the researcher was inside the airplane, his mobile phone rang and behold the passenger that exchanged his hand luggage has returned it to the Luxurious driver. The researcher then

directed the caller to call his sister in Nigeria to arrange where to meet and to handover his exchanged hand luggage to her to keep for him. The researcher then was settled and enjoyed the trip with the wonderful hostess that attended to him in the airplane. The flight landed safely at the London Heathrow airport and the researcher checked out of the airport and called his family friend who was to pick him up at the airport. His family friend who resides in Coventry, directed the researcher to join the National Express bus from London to Coventry bus pool meadow. The researcher asked for direction on how to locate the National Express office where he will book for his journey to Coventry, and he was directed. The researcher spent about one hour after booking before the arrival of the National Express bus that took him to Coventry bus Pool Meadow. On arrival at the Coventry bus Pool Meadow, the researcher called his family friend who came to pick him there. The researcher was highly excited seeing his family friend and both were happy thanking God for the journey mercy. His family friend took him to his office which was close by to the bus Pool Meadow and asked him to wait at the reception. The researcher waited for about an hour before his family friend came and took him to his home within Coventry. On getting home, the entire family members happily welcomed him to their home. It was a wonderful experience that remains fresh in the memory of the researcher till the time of this report.

The researcher left Coventry the next day to Anglia Ruskin University, Chelmsford campus to meet with his supervisory team for arrangement of meeting dates, time, and venue. The researcher was given a warm welcome by his supervisory team and arrangement for meeting dates, time and venue were fixed. At the end of the meeting, the researcher returned to Coventry in the evening of that day. All meetings were scheduled to take place in Cambridge campus on agreement of the researcher and the supervisory team. The researcher went to Anglia Ruskin University campus in Cambridge to complete his registration and to arrange for school accommodation the following week. The university staff at the Cambridge campus were very receptive and accommodating as they supported the researcher who was new to the campus with all that he needed to know and to do. The researcher completed his registration and secured university accommodation the same day. At the end, the researcher returned to Coventry and was back on campus to his university accommodation in Tenison road, Cambridge which is about five minutes' walk to the campus the following week.

The journey to Nigeria from United Kingdom for data collection started on September 2016 when the researcher first booked for flight to travel in January 2017. The ticket was issued on 29th September 2016 and the flight was to take off from London Heathrow Airport on 23rd January 2017 with Turkish Airline to stop at Istanbul for a few hours and continue to Murtala Muhammed International Airport in Lagos, Nigeria. The flight took off on the 23rd of January 2017 from London Heathrow Airport terminal 2 as planned and on time as scheduled at 7.55am and arrived Ataturk Airport Istanbul terminal 1 at 1.45pm. The stopover time at Ataturk Airport Istanbul was two hours five minutes. The researcher was at the airport seating on the floor as there were no vacant seat to sit on for the period. At 3.50pm, the flight took off from Ataturk Airport Istanbul to Murtala Muhammed International Airport in Lagos, Nigeria.

The flight was in the air for five hours five minutes and landed at 9.15pm. It took the researcher about one hour to collect his luggage and check out of the airport. The researcher had to call one of his old Sapele Technical College school mates from the same department of Automobile who resides in Lagos to come and pick him to the park where he will board a bus to Asaba, Delta State. The researcher was picked up from the airport to the park where he faced another ordeal. After payment at the motor park, there was delay till the following morning before taking off to Asaba the capital of Delta State. The researcher arrived Asaba in the evening of 24th January 2017 very tired and stressed out.

However, the researcher's plan for data collection was shelved as the requirements for Anglia Ruskin University ethical approval were not met before the date of the journey. One of the main requirements for Anglia Ruskin University ethical approval before proceeding for data collection was institutional approval from the institution(s) planned to be used for the conduct of the research. The researcher then proceeded for the journey not to collect data but to secure approval from the intended institutions to be used for the study. The researcher was able to secure institutional approval from one of the institutions to be used for the research. The process of securing the approval took three months as the researcher had to apply for introduction letter from the oversea institution where the researcher is studying. The researcher then applied for the introduction letter which was approved in February 2017. The approval and issuance of the introduction letter was received through an email and at that time the researcher was already in Nigeria. The researcher applied for approval for use of institution with the attachment of the introduction letter as a PhD research student at Anglia Ruskin University, United Kingdom in March

2017, and approval from one of the institutions was given in April 2017. The researcher was unable to reach the second institution for approval before travelling back to the United Kingdom.

Returning to United Kingdom was supposed to be on the 12th of April 2017 through the same route (Murtala Muhammed International Airport Lagos through Ataturk Airport Istanbul to London). However, the researcher missed the flight because there was traffic on the way to the airport which led to arriving late at the airport. When the researcher arrived at the airport, the airline has closed boarding and all effort to join the flight before it took off proved abortive. The researcher slept at the airport that night trying to book for another flight to United Kingdom. That was one of the unforgettable nights of the researcher's PhD journey as the researcher spent the night on a chair without rest of mind, thinking of the quickest, easiest, and cheapest way of returning to the United Kingdom to continue with the PhD programme. It was the following morning being the 13th day of April 2017 that the agent which assisted the researcher to book the flight in United Kingdom responded to the request for rebooking of another flight back to the United Kingdom with extra charges. The researcher paid for the charges and confirmation for the journey back to the United Kingdom was sent with the itinerary through an email. It was after receiving confirmation of the flight that the researcher had rest of mind and proceeded to book for an hotel to pass the night before journeying the next day. The rebooked flight left Lagos – Murtala Mohammed International Airport on the 14th of April 2017 at 8.45pm and arrived Ataturk Airport Istanbul at 5.20am. The journey from Lagos to Istanbul took 8 hours 35 minutes and the researcher was in Istanbul at the airport for 2 hours 25 minutes before the flight took off at 7.45am to London. The researcher landed at London Heathrow Airport at 9.50am on the 15th of April 2017.

The second planned trip to Nigeria for data collection was from January 2018 to March 2018. Data collection on this trip after booking for the flight was also postponed based on advice of the researcher's first supervisor. However, the researcher made the journey to see family members, secure approval for the use of the second institution and to discuss his financial challenges with the sponsors of the PhD programme in Nigeria. The financial challenges were due to high exchange rate of Nigeria currency (Naira) to the British Pounds. This second trip was also stressful as the researcher had to visit the second institution several times to secure approval for use of the institution to carry out his research. In addition, the researcher had to visit his home institution in Asaba and the Tertiary Education Trust Fund

(TETFund) in Abuja to discuss his financial challenges as his sponsors. The second journey could be said to be successful as the researcher was able to secure approval for the use the second institution.

The third trip to Nigeria for data collection was on the 22nd of June 2018 and the researcher departed from London Heathrow Terminal 5 at 10.35pm and arrived Abuja International Airport the following day being 23rd June 2018 at 8.05am through British Airways. The researcher rested for a few days before proceeding to the field for data collection. From the Federal Capital – Abuja to Delta State was a far journey that was very stressful and took the researcher several hours. The researcher left Abuja at night and got to Asaba the Delta State capital in the evening of the following day in a luxurious bus with minimal comfort.

The researcher visited the gatekeepers (heads of departments) of the two institutions and arranged on how to access the respondents of the study on different dates. The details on how the respondents were reached and how data was collected are stated in the following section. The field work for data collection lasted for about three months. At the end of the field work, the researcher left Nigeria on the 19th of September 2018 to United Kingdom through British Airways at 8.05am from Abuja International Airport and arrived in London Heathrow Terminal 5 at 2.35pm.

4.9.2 Data Collection

Questionnaires and interviews were used as methods of data collection. Questionnaires as instruments for data collection were invented by Sir Francis Galton (Abawi 2013) and are sets of prepared questions designed by the researcher in line with the research objectives to elicit responses from respondents to answer the research questions for the study. The researcher used structured and open-ended questions. Open-ended questions are questions that do not have a list of predetermined answers for respondents to choose from. It gives respondents the freedom to respond to questions to the best of their knowledge without been constrained to pick from the provided answers that may not suit what they may have in mind. The purpose of data collection in any research is to answer the research question(s) and address the purpose of the study. The researcher, therefore, considered it appropriate to choose data-gathering instruments that will generate the required data to answer the research questions. Based on this understanding, the researcher decided to use semi-structured interviews and open-ended questionnaires as instruments for data collection. The decision becomes necessary for the researcher

to give respondents the opportunity and freedom to respond in their own opinion on ways of dealing with the challenges of VTE programmes and improving its delivery.

The researcher visited the institutions for data collection and reached the gatekeepers through whom the respondents were recruited. The researcher introduced himself to the respondents and explained the aim of his study to them. The participant information sheet was given to the respondents and those who indicated interest to participate in the study were given the participant consent form and those that signed the form were used for the study. The researcher interviewed 19 respondents, administered 83 questionnaires. However, only 74 completed questionnaires were retrieved (see Table 2 above). Interview dates, time and venue was arranged with the respondents of the study. The researcher met the respondents individually at the venue, time and date agreed on. There was a rearrangement to meet those respondents that could not meet up with the earlier agreed date for one reason or the other.

4.10. Data analysis

The qualitative data aided the researcher to recognise and define groups to get meaning while the quantitative data established the link between groups (Fink 2000). The quantitative data were derived from the conversion of the qualitative data gathered with the questionnaire instrument. The responses of the respondents in the open-ended questionnaire were coded and organised into themes. Frequency emerged from the number of times the emerging themes appeared in the responses of respondents and the proportion was derived from the frequency. The percentage proportion of the themes was calculated, and the questionnaire data was analysed using the frequency and the percentage proportion. According to Creswell (2014), the use of number is one of the characteristics of quantitative study. Therefore, the researcher applied quantitative techniques in the analysis of the questionnaire data. The use of appropriate data gathering, and analysis procedures produced the suitable level of data required to achieve the aims of the study and then addressed the research questions that guided the study.

In this study, the researcher also explores his personal experience and interviews which are some of the features of the qualitative research approach (Egmir, Erdem and Kocyigit 2017). Qualitative study is interpretive and is different from quantitative (Erickson 1986 in Castellan 2010). Understanding of human behaviour, experience, and ways that individuals understand things are the goals of qualitative research (Saldana 2013; Bogdan and Biklan 1998 in Castellan 2010).

According to Dudovskiy (2016), the qualitative research method is considered appropriate when it involves the considerations of the views of respondents on a given issue(s) which the study adopted. The views of respondents of the study were sought for consideration on issues that concerned the effective delivery of vocational-technical education programmes. Their views were considered and reported in the study; thereby justifying the use of the method. Qualitative dissertations according to Dudovskiy 2016, include descriptive material, extracts from interviews, conversations, documents, or field notes which were explored in the study. Qualitative research is as important as quantitative research as each has equally contributed to helping educational researchers to make important discoveries (Castellan 2010). The study used both methods for better results by exploring the benefits of each of the methods in addressing the research problem. Castellan (2010) was of the view that quantitative studies support the view of positivism that physical and social realities do not depend on whoever is observing them. Their major concern is on objective realities that are in the field under study and the person carrying out the study is independent of the study. As for qualitative research, it is post-positivistic in viewing that social realities are constructed by different people in different ways. Post-positivist is that which concerns the perception of the world by individuals which accounts for the variation of opinions on the same subject, and the impact of the researcher on that which is being studied (Creswell 2014)

The qualitative data were analysed thematically based on the participants' perceptions and experiences that were displayed in their responses. Thematic analysis was adopted in the analysis because of its characteristics of offering fresh ways of exploring identity (Bailey-Morrisey and Race 2019). Thematic analysis according to Khalaf *et al.* (2021:3), "...is a descriptive and interpretive process of selecting codes and constructing themes". The adoption of thematic analysis is in support of Maddocks *et al.* (2018). The employers, trainers and trainees that were interviewed consented for the audio recording of the interviews. The approach of audio recording is also in support of Yildirim, Yılmaz, Engin and Aksu (2021); Brubacher *et al* (2019) who made use of audiotaped interview in their study. In addition, Maddocks *et al* (2018) made use of digital recording of interview in their study on "Treating a patient should be approached in a holistic manner': collaboration of doctors and physiotherapists in the rehabilitation of people living with HIV". The recorded interviews were transcribed into word documents and uploaded into NVIVO 10. The transcription was verbatim following the steps of Yildirim, Yılmaz, Engin and Aksu (2021:17) who in their study transcribed all oral data "verbatim in the original interview

language”. Verbatim transcription of recorded interview is in support of Maddocks *et al.* (2018). Coding was done to identify themes and the themes that emerged were categorised using the open code method. The observed relationship and disagreements of respondents’ views were recognised and stated. The researcher followed the steps of Maddocks *et al.* (2018:54), in that “...narratives from interviews were read repeatedly and common themes were extracted, distinguishing between similarities and differences”. The researcher started the process of the data analysis by creating an NVIVO project titled Research Interviews and brought in the data generated from the respondents. The three main characteristics of NVIVO used are sourcing, classification, and nodes/codes sections (Katsande 2016). The sections helped the researcher to fix the sources, the demographics, and the coding formation into the emergent themes below:

- ✓ Strength of VTE
- ✓ Constraints to implementation of VTE
- ✓ Industry and VTE facilities
- ✓ Industries level of satisfaction of VTE graduates
- ✓ Role of the industries in VTE
- ✓ VTE and Industry Synergy
- ✓ VTE status in Delta State
- ✓ Curriculum planning and Review
- ✓ Improving VTE delivery

The researcher reassesses, combines, and improves his coding, discovers vital concepts and ties among them. In addition, the researcher nexus info back to source, consequently permitting him to drill more into his data which should have been very difficult with manual coding. Coding according to Saldana (2013) is one of the ways of analysing qualitative data. “A code in qualitative inquiry is most often a word or short phrase that symbolically assigns a summative, salient, essence-capturing, and/or evocative attribute for a portion of language-based or visual data” (Saldana 2013:3). Saldana (2013:3) added that “data can consist of interview transcripts, participant observation field notes, journals, documents, artifacts, photographs, video, internet sites, e-mail correspondence, literature, and so on”. Coding was described by Charmaz 2001 in Saldana (2013:3) as “a critical link between data collection and their explanation of meaning”. Following the description of code as “...a researcher-generated

construct that symbolizes and thus attributes interpreted meaning to each individual datum for later purposes of pattern detection, categorisation, theory building, and other analytic processes”, the researcher coded the data from the interview transcript as shown in appendix ix. Most of the coding in the transcript is an NVIVO code because it was taken directly from what the participants has said during the interview, while others were summarised. Eclectic coding was also utilised as some of the codes are not specific but “...are first-impression phrases derived from an open-ended process” (Saldana 2013:5). The researcher reflected on the data to decode core meaning from it and encoded it by determining an appropriate code to label it which is in support of Yildirim, Yılmaz, Engin and Aksu (2021); and Saldana (2013). Examples were displayed in the findings and analysis, and in the discussion of findings chapters of the study.

In the findings and analysis chapter, the example of first-impression phrases which were derived from ‘eclectic coding’ were displayed in Table 4, where the responses of the respondents were coded under 9 themes. Similar codes were brought together to generate themes which is in support of the study of Yildirim *et al.* (2021). The transcript shows the detailed coding of the data collected with the semi-structured interview. The coding of the responses of the respondents were sorted into the nine themes using eclectic coding. The responses of the respondents were coded and categorised under trainers, trainees, and employers. The entire research was driven by pre-existing theories which is in support of Saldana (2013). Nvivo codes were also displayed in the transcript under the theme ‘Industries and VTE Facilities’ where the codes were all from the responses of the respondents during interview (see interview transcript in appendix ix).

The encoding process described by Saldana (2013) was followed as the researcher went through the transcript over and over to identify the appropriateness of each code and to label it (see appendix ix). Saldana (2013:5) states that “...in larger and complete data sets, you will find that several to many same codes will be used repeatedly throughout. This is both natural and deliberate – natural because there are mostly repetitive patterns of action and consistencies in human affairs as documented in the data”. Therefore, the repetitions in this study are appropriate as the study has to do with human beings who are involved in VTE programmes either as trainers, trainees, employers or consumers of goods and services delivered by the graduates of the programmes.

The use of NVIVO 10 formidable search and queries helped the researcher to cross-examine the data to discover sensitive relationships by running word queries, frequencies, and coding comparisons. The frequencies of the trainers, trainees and employers were successfully matched against the themes that emerged as shown in the next chapter (see Table 4).

The responses of the respondents in the open-ended questionnaire were coded and organised into themes. The frequency emerged from the number of times the emerging themes appeared in the responses of respondents and the proportion was derived from the frequency of the emergent themes as presented in the next chapter which is findings and analysis (see Tables 5-9 in Chapter 5).

4.11 Research Ethics and Procedures

Ethical consideration is essential in the conduct of any research for the protection of the respondents (participants) of the study from any harm and their interest or privacy. Ethical issues are part of any social science research and were fully integrated into the study. Katsande (2016) affirmed that ethics is very important as it has to do with human participants who should be protected from harm. According to Maxwell (2019), ethical issues should be part of the research process starting from the consideration of the topic through to the final submission of the research project. Credence was given to ethical issues by the researcher from the conception of the topic and the writing of the proposal for approval. Having satisfied the preliminary stages of ethical considerations and the paperwork, the proposal was approved. Similarly, ethical judgements were made during the formulation of the research questions to ensure that the required data that will be collected from participants of the study to answer the research questions will not in any way expose them to any form of danger or harm.

Every study is unique and requires different ethical procedures. It is, therefore, the duty of the researcher to identify the ethical procedural requirements inherent in the proposed study. This current study requires the views and opinions of respondents and does not involve human substance. Therefore, the ethical issues border around privacy and anonymity was noted and adhered to throughout the study (Longhurst 2020). To achieve this, the researcher was careful and mindful of the type of question to ask during the semi-structured interview and the open-ended questions in the questionnaire items. In preparation to go into the field, the researcher applied for an introduction letter from the Faculty of Health, Social Care and Education (FHSCE) to introduce him as a research student at Anglia Ruskin University to the

gatekeepers of the institutions where the research was conducted. The application was approved, and the introduction letter was issued (see the introduction letter in the appendix). The introduction letter was attached with the application letter from the researcher to the gatekeepers for the use of their institutions for the research. Approval was given by the gatekeepers of the institutions that were used for the study before accessing the respondents of the study (see institutional approval in the appendix). The researcher duly followed the ethical processes to protect the participants of the study from have being punished by their institutional heads for divulging information concerning the institution without their consent. Therefore, this was done to give the participants confidence to participate in the study without fear of being accused of divulging any information concerning the institution without permission.

The researcher prepared a participant information sheet explaining the nature and purpose of the study, the role of the participants and their right to withdraw from the study should the need arise (see participants information sheet in the appendix). In the same way, the researcher prepared participants consent form to solicit their consent to participate in the study (see participant consent form in the appendix). The researcher applied for ethical approval to go to the field with the participants information sheet, consent form and approval letters for use of the institutions as an attachment to the ethics committee. The Faculty of Health Social Care and Education Ethics Committee were satisfied with the paperwork and gave approval for the researcher to go to the field for data collection (see ethical approval in the appendix).

The researcher accessed the participants of the study through their institutional gatekeepers and introduced himself and his study to them. The aim of the study was clearly explained to the prospective participants, seeking their consent to participate in the study. It was only those that agreed to participate in the study and signed the consent form that participated in the study.

4.12 Chapter summary

The chapter described the systematic approaches followed in the conduct of the study. It explained the methods that were followed which could be repeated to arrive at the same result. Mixed methods research design was adopted for the study. The procedures followed to achieve the study's objectives and to answer the research questions were vividly explained. Similarly, the theoretical directions underpinning the study were elucidated. In addition, the study's validity, reliability, credibility,

dependability, and transferability were clearly stated. The population of the study and sampling techniques adopted were also stated. Interviews and questionnaire were used as instruments for data collection. The data collected were analysed using NVIVO and percentages. Furthermore, the ethical procedures followed throughout the study were explained. The findings of the study shall be presented and analysed in the next chapter.

Chapter Five

Findings and Analysis

5.0 Introduction

This chapter is the outcome of the fieldwork that was carried out and is divided into two main sections which are the interview and the questionnaire sections. The data that were gathered with the interview and questionnaire instruments are presented and analysed separately under their various headings. The analysed data would be merged for discussing in the discussion chapter which is Chapter six.

5.1.0 Interviews

The findings are presented and analysed according to the themes. Nine themes emerged from the results of the interview as shown in Table 4 below. The nine themes that emerged from the responses of the respondents as shown in Table 4 below, were merged and presented under three headings: strengths and constraints of VTE programmes in Delta State, VTE and industry facilities compared, and improving VTE delivery. The detailed discussion of the findings is considered in the next chapter (Chapter six) under the three headings for the purpose of continuity and uniformity.

Table 4: Status of VTE Comparison – trainers, trainees, and employers

	Interview: Status Trainers	Interview: Status Trainees	Interview: Status Employers
Strength of VTE	6	2	3
Constraints to implementation of VTE	10	4	5
Industry and VTE facilities	9	3	0
Industries level of satisfaction of VTE graduates	0	0	3
Role of the industries in VTE	7	0	5
VTE and Industry Synergy	7	4	0
VTE Status in Delta State	7	4	5
Curriculum planning and Review	1	1	2
Improving VTE delivery	9	4	5

From Table 4 above, the number of responses to the 9 themes that emerged from the results of the study were presented. The results show that 6 out of 10 trainers that were interviewed responded to the theme on strength of VTE. Therefore, 60% of trainers' responses were captured under the theme on strength of VTE. The 60% response implied that 40% of the trainers did not comment on the strength of the programme. As for the trainees, 2 out of 4 of them which represent 50% that were interviewed responded to the issue of strength of VTE. Therefore, half of the trainees that were interviewed responded to the strength of VTE, while half were silent on the issue. Employers' response to the theme on the strength of VTE was 60% as 3 out of 5 of them commented on the issue of strength of the programme and 40% did not.

The second theme on the table refer to constraints relating to the implementation of VTE, and it attracted 100% responses from the various categories: trainers, trainees, and employers. This implies that none of the respondents (trainers, trainees, and employers) were silent on the issue of constraints among the 19 that were interviewed. It could also be that the issue is of a major concern to the respondents of the study as it is the only theme that attracted 100% response from all the categories among the 9 themes that emerged from the study.

Industry and VTE facilities attracted 90% responses from the trainers as 9 out of 10 of them that were interviewed responded to the theme. It was only 10% of them that did not make any comment on the industry and VTE facilities. The number of trainees that responded to the theme was 3 out of 4 which is 75% response. This theme recorded 0% response from employers as none of their comments were captured under the theme. The analysis of industry and VTE facilities were presented in section 5.1.2.1 Industries level of satisfaction of VTE graduates attracted no responses from trainers and trainees that were interviewed because the question was not directed to them during the interview. Their non-response was because the question on the industries' level of satisfaction of VTE graduates was not directed to them; hence they were not in position to give a valid comment on the satisfaction of industries in respect of VTE graduates. Therefore, the employers should be the ones to comment on their level of satisfaction of the graduates of VTE programmes whom they have employed from their performance in their various areas of specialisation. The employers did comment on their level of satisfaction with 60%

response as 3 out of the 5 of them that were interviewed made categorical statements on the issue of industries level of satisfaction of VTE graduates (see section 5.1.2.1 for details).

The theme on the role of the industries in VTE had 70% responses from trainers as 7 out of the 10 of them that were interviewed responded to it. The response of employers on their role in VTE programmes was 100% which is an indication that they are fully aware of the important role they need to play for effective delivery of the programme. The detailed analysis of their responses on their role in the delivery of VTE programmes is considered in section 5.1.2.2.

The 100% response of employers on their role in VTE programmes show that the synergy of industry and VTE institutions is achievable. However, the findings of the study show that the enabling legislation is lacking. The lack of enabling legislation could be responsible for the rejection of VTE trainees by some industries as noted by trainees during the interview. It could be their perception on the extent to which the industries are been involved directly with VTE institutions on the training of trainees. The implication of the finding is that the industries were not obliged to be involved in the training programme of VTE trainees, hence most of the industries do not accept VTE trainees to do their industrial attachment with them. It appears that there is no strict legislation in place on the synergy of industries and VTE institutions on the effective delivery of VTE programmes. Literature in the field has indicated poor synergy between VTE institutions and the industries which has affected the graduates of the programmes (Akanbi 2017; Oviawe 2017; Serumu 2015; Yaro and Cheledi 2012). However, there was 100% response of trainees on the issue of VTE and industry synergy. The implication of the 100% response of trainees is that they were aware of the benefit they will derive from full synergy of industries and VTE institutions as trainees of the VTE programme. VTE and industry synergy also captured 70% response of trainers with comments from 7 out of the 10 trainers that were interviewed. Therefore, trainers and trainees understood the importance of VTE and industry synergy.

The theme on VTE status in Delta State attracted 70% response of trainers as 7 out of the 10 interviewed commented on it. Trainees and employers' responses on the status of VTE in Delta State were 100%. The implication of the results is that the respondents of the study were fully aware of the state of the practical training programmes of VTE in Delta State.

Curriculum planning and review attracted 10% of trainers' response as one out of 10 of them that were interviewed responded to the theme. One out of 4 trainees interviewed also responded to the curriculum

planning and review which represent 25% response. Employers has the highest response on the issue of curriculum planning and review when compared to trainers and trainees. The percentage response of the employer was 40% as 2 out of 5 of them interviewed commented on it.

The theme on improving VTE delivery had the second highest response from the respondents of the study. It was next to the theme on constraints to implementation of VTE. The theme on Improving VTE delivery attracted 90% response from trainers as 9 out of 10 of them commented on it. Trainees and employers responded to the theme with 100% response as all of them that were interviewed responded to it. Their responses have the implication of need for improvement of the delivery of VTE programmes (see 5.1.3 for details).

The detailed analysis of the responses of the respondents from the various groups/categories to the 9 themes above are considered under the three headings mentioned earlier in this chapter. The three headings are: Strength and constraints of VTE programmes in Delta State, VTE institutions and industry, and Improving VTE delivery. The merging for detailed analysis is as follows: The first heading comprises of the first two themes in Table 4 which are strength of VTE and constraints to implementation of VTE; The second heading comprises of the 3rd, 4th, and 5th themes on table 4 which are industry and VTE facilities, industries level of satisfaction of VTE graduates, and role of the industries in VTE; and The third heading comprises of the 6th, 7th, 8th, and 9th themes in Table 4 which comprise of VTE and industry synergy, state of VTE practical training in Delta State, curriculum planning and review, and improving VTE delivery.

5.1.1.0 Strengths and Constraints of VTE Programmes in Delta State

The opinions of various people (trainees, trainers, and employers) as to what were the strengths and constraints of the VTE programmes were researched which are presented and analysed under the two subheadings. From the results of the study, the constraints of VTE are more than the strengths. This is an indication that the programmes are faced with challenges that need to be addressed.

5.1.1.1 Strengths of VTE

Theoretical curriculum: The study shows that the training of the students was more concerned with theory than the practical. The two trainees that responded to the question on the strengths of VTE saw the emphasis on theoretical teaching of the institutions as a strength. The views of two out of the six trainers that responded to the issue of strengths of VTE programmes in the state were the same as

those of the two trainees. They all accredited the strengths of the programmes to theoretical delivery. Trainee 4 confirmed that trainers “spend more time teaching and emphasizing the theoretical aspect of the course contents and examination questions are also drawn from the theoretical part of the content”. The teaching and emphasising of the theoretical aspect and setting questions on that same aspect as claimed by trainee 4 would lead to imbalance in the delivery of a programme that comprise of theory and practical. In addition, the goals and objectives of the programme may not be fully achieved. The focusing of VTE trainers on the theoretical aspect of the programme than the practical aspect was also observed by Dokubo (2017). The imbalance in VTE programme delivery may be responsible for skills deficiency of the graduates of the programme as observed by Mima-Eyovwunu *et al.* (2020). Some researchers in the field have stated that VTE programmes in Nigeria which apply to Delta State are not meeting the needs of the labour market which is one of its primary goals and objectives (Dokubo 2017; Inyiagu 2014; Ubom, Haruna, and Aregbesola 2013) because of lack of practical skills. Ojimba (2013) states that the unemployment of VTE graduates is due to lack of employability skills. Employability skill of VTE graduates to a large extent lies in the practical component of the programme which has not been properly delivered due to lack of needed facilities for its delivery. It therefore implies that the theoretical strength of the programme delivery without the practical aspect of the programme would hinder the achievement of the goals and objectives of the programme.

Curriculum imbalance: The findings show an imbalance between the theoretical and practical training of the trainees although theoretical and practical knowledge are equally essential in the delivery of VTE programmes. The response of employer 2 states that the trainers, “...dwell more on theories” and is what made employer 1 see the dominance of the theoretical training of the trainees as a weakness rather than a strength. Despite the imbalance, trainers 3 and 4 are of the view that the institutions are providing students with the skills they need to be self-employed. However, their view is against the view of the majority who saw the training programmes to be deficient of practical skills needed to be self-employed. According to Okolie *et al.* (2019:2), VTE “students attain theoretical content knowledge ability, but lack professionalism and generic skills”. Nevertheless, the theoretical mastery and delivery of VTE trainers could be justified as strengths since VTE programmes comprise theory and practical (Odo *et al.* 2017; Nwosu and Micah 2017; Jeerapattanatorn 2013; Yaro and Cheledi 2012).

Number of Trainers: Two of the respondents (trainers 2 and 4) out of the 19 respondents that were interviewed felt that there was an adequate number of VTE trainers. Trainer 2 stated that “the institutions have the personnel and minimum resources required for training the students” whilst trainer 4 states that the manpower of the institutions in the state is sufficient. Trainer 2 asserted that “...the students are willing to be trained”. These few respondents think that what they are doing is sufficient. The views of the majority are considered under the next heading on constraints of the programmes.

5.1.1.2 Constraints of VTE Programmes in Delta State

The identified constraints affecting the effective implementation of VTE programmes are presented and analysed below.

Facilities: Most of the respondents pinpointed a lack of adequate facilities as a major constraint to the effective implementation of VTE programmes. Facilities include equipment, machines, tools, building/workshop, and other materials that are used to make teaching and learning effective (Olutope 2014; Nwogu and Nwanoruo 2011). Lack of required facilities would lead to theorising of practical activities that were supposed to be carried out due to the absence of facilities needed to facilitate the practical training.

Each of the five employers commented on the facilities within VTE institutions. Their views were that VTE institutions are ill-equipped in terms of required facilities when compared with what they have seen in the industry. This was shown from their statement, as employer 1 stated that VTE institutional “...facilities for the effective practical session are either not available or they are obsolete” whilst employer 5 emphasised that there is a lack of equipment for the practical training of trainees. The employers claimed that their interaction with the trainees on industrial attachment with them made them to be aware of the state of their institutional facilities. The issue of facilities in VTE institutions was raised by most researchers in the field from reviewed literature, describing it as either inadequate or obsolete (Bisalla and Adeyemi 2016; Okoye and Arimonu 2016; Serumu 2015; Ayonmike, Okwelle, and Okeke 2015; Ojimba 2013; Yaro and Cheledi 2012; Puyate 2008). Nwogu and Nwanoruo (2011) state that inadequate facilities are one of the challenges of VTE programmes in Nigeria. Mima-Eyovwunu *et al.* (2020) also describe the facilities in VTE institutions in Nigeria as inadequate. Dokubo and Dokubo (2013) state that the lack of facilities in VTE institutions is one of the challenges of VTE programmes in Nigeria. In addition, Chinedu-Ali *et al.* (2020) attributed the major challenges to the effective

implementation of VTE programmes to inadequate and obsolete facilities. Therefore, the identification of lack of facilities in VTE institutions as a challenge to effective delivery of the programme is in support of the existing literature in the field. It also shows that the issue of facilities inadequacy in VTE institutions in Nigeria which has persisted for decades has remain unabated.

The views of the two trainees that responded to the issue of facilities were not different from that of the employers. Trainee 1 identified inadequate modern facilities to carry out emerging and current training in chosen areas of specialisation as part of the challenges facing VTE institutions. Trainee 2 reported that the facilities needed for practical training are not there. The absence of required facilities for practicalities could jeopardize the training programme as the trainers will be handicapped in the delivery of the practical aspect of the course they undertake to teach. Indeed, the trainees will be negatively affected as they would not have the practical experience needed to function in their respective vocations on graduation. In addition, their performance will be adversely affected in the process of service delivery to their customers or future employers. This has the implication of graduates' difficulty in securing a job in the industry and able to establish on their own in their various areas of specialisation and increase unemployment with its attendant social vices.

The responses of trainers in VTE facilities were the same as those of employers and trainees. Trainers 5, 7 and 9 agreed with trainer 1 who states that, "There are inadequate tools, equipment, machines and consumable materials for practical exercises" whilst trainer 2 identified the unavailability of resources and facilities for the training of their trainees. Trainer 3 agreed that the facilities are not adequate and added that there is ". . . a mismatch between the industries and the institutions in areas of equipment, skilled manpower and facilities". The trainers were able to make the assertion when they have seen the available facilities and calibre of staff in their VTE institution and that which are available in the industry and saw that they are not comparable.

Most of the machines, equipment and tools used in the workshop/lab are electrically powered. The unreliable power supply in Nigeria, coupled with the high cost of an industrial generator has contributed to the challenges of VTE programmes in the country as indicated by one of the interviewees. Employer 4 states that "The issue of power is a major problem". Trainee 3 lamented that "There is no adequate power supply to facilitate the practical training". According to Mima-Eyovwunu *et al.* (2020), poor power supply is one of the challenges affecting effective VTE programme delivery in Nigeria. The views of

employers, trainees, and trainers on the facilities available in VTE institutions in Delta State show that it is inadequate. The views of the respondents of the study are not different from the findings of the previous researchers in terms of available facilities in VTE institutions in Nigeria (Mima-Eyovwunu *et al.* 2020; Nwosu and Micah 2017; Akanbi 2017; Bisalla and Adeyemi 2016; Okoye and Arimonu 2016; Serumu 2015; Ayonmike, Okwelle, and Okeke 2015; Ojimba 2012; Nwogu and Nwanoruo 2011; Puyate 2008).

One of the respondents identified environmental factors as a constraint to the effective implementation of VTE programmes. Employer 5 described the VTE institutions work environment to be unfavourable. A favourable work environment is that with adequate provision of the required amenities for the workers to carry out their duties safely and anything short of this is unfavourable; and that seems to be the condition the VTE institutions from the results of the study. Although, the modern facilities which were available in the industries may not be available in the VTE institutions, the findings show that the few available ones are not being maintained. The poor maintenance culture as identified by trainer 3 could lead to the defacing of the available facilities and thereby contributing to the environment been unconducive. Trainer 3 attributed some of the challenges of VTE delivery to "...lack of maintenance culture". Maintenance of facilities contributes to a good teaching and learning environment which trainer 5 states is not enhanced. However, the cost of maintenance of VTE facilities is very high (Zite and Deebom 2017) and could be responsible for the observed lack of maintenance. Therefore, the lack of maintenance of available VTE facilities may not be because of poor maintenance culture alone as stated above but also because of high cost of maintenance coupled with insufficient funds available for the programme delivery (Mima-Eyovwunu, Tene-Omadide, Yahaya, and Orueyegha 2020; Zite and Deebom 2017; Bisalla and Adeyemi 2016; Ayonmike, Okwelle and Okeke 2015).

A lack of qualified trainers is another inhibiting factor that was also highlighted. The responses of seven of the respondents to the study indicated inadequacies in training of the trainers and unavailability of experienced trainers that are needed for effective delivery of VTE programmes in the state. The results have shown that the VTE higher institutions in the state are inadequately equipped with training facilities (Mima-Eyovwunu *et al.* 2020; Dokubo 2017; Bisalla and Adeyemi 2016; Ayonmike, Okwelle and Okeke 2015; Nwogu and Nwanoruo 2011). It is, therefore, obvious that the graduates of institutions would be inadequately prepared as VTE trainers especially in the delivery of the practical aspect of the

programme. Employers 2 and 4 stated that a lack of qualified trainers is one of the constraints facing VTE programmes in their institutions. Employer 5 asserts that "...many of the teachers are not properly trained" and added that "... they have not mastered the practical knowledge required on the job". Employer 1 stated that VTE trainers are not practically oriented in their areas of specialisation and need to be retrained "... to be effective in practical lesson delivery".

The trainers themselves recognized the issue of their training as could be seen from the responses of four of them. Trainers 3 and 5 described the training and retraining programmes of VTE trainers as poor. Poor teacher training could be responsible for the assertion of trainer 1 that the practical delivery of VTE institutions is poor. Similarly, poor practical training was supported by trainer 8 who stated that the programmes "...are weak in terms of practical skills' delivery and acquisition". The findings of the study and the existing literature (Allen 2020; Gilchrist 2020; Goyol and Sunday 2020; Yaro and Cheledi 2012) have shown that VTE trainers in Nigeria lack adequate training for effective programme delivery. According to Olutope (2014:1), "Nigeria education system gives little or no attention to technology and vocational business education...". The result of lack of attention that the programme deserves may have contributed to the mismatch between the training the institutions are offering to their trainees and that which are required in the labour market (Chinedu-Ali *et al.* 2020). Inyiagu (2014:41) states that "TVET face challenges of meeting the changing demands of today's industries and the new challenges posed by the global economic environment". The results of the study show that VTE trainers have not been adequately trained to equip trainees with the needed skills for the world of work that was advocated by Gilchrist (2020). It therefore implies that the inadequate training of VTE trainers is one of the factors affecting the effective delivery of the VTE programmes in Delta State, Nigeria.

Funding: Four of the respondents to the study (one employer, one trainee and two trainers) identified poor funding of VTE programmes as one of the major factors affecting the effective delivery of VTE programmes. Employer 5 described the funding of VTE programmes as "...poor". As for trainee 4, the available funding is inadequate. The responses of the two trainers show that VTE programmes are underfunded. In their views, funding is the major challenge to effective implementation of VTE programmes. The implication of the findings is that, with adequate provision of funds, most of the challenges of VTE programmes would naturally be resolved in the absence of other challenges such as funds mismanagement/diversion and curriculum inadequacies. The capital intensiveness of the

programme and its practical nature that requires tools, machines, equipment, and consumables makes funding a key factor for its effective delivery. Existing literature in the field has equally shown the central role funding has to play in the delivery of VTE programmes such as procurement of facilities and its maintenance, recruitment, and payment of qualified personnel (Chinedu-Ali *et al.* 2020; Goyol and Sunday2020; Allen 2020; Kemevor and Kassah 2015; Inyiagu 2014; Olutope 2014; Ubom, Haruna and Aregbesola 2013; Ojimba 2013). The majority of researchers in the field have described the funding of VTE institutions in Nigeria as either inadequate or poor and that has affected the delivery of the programmes in the country (Chinedu-Ali *et al.* 2020; Zite and Deebom 2017; Okoye and Arimonu 2016; Ayonmike 2015; Serumu 2015; Ojimba 2013; Yaro and Cheledi 2012; Nwogu and Nwanoruo 2011; Ikpe 2010; Puyate 2008).

Two of the respondents of the study attributed some of the challenges facing vocational-technical education programmes in Nigeria to its curriculum. Employer 5 states that “. . . the curriculum does not reflect what the students are supposed to meet after graduation”. Despite the curriculum being strong theoretically, trainer 5 states that it “. . . is overloaded with theoretical content instead of contents that have to promote the use of hand and the brain”. The implication of this is that the certification of VTE graduates is based on the theoretical aspect of the programmes. It then follows that there would be a recycling of theoretical future trainers of the programmes as some of the graduates would emerge as trainers on graduation.

Leadership: Two of the respondents to the study identified leadership as one of the constraints in the implementation of VTE programmes. Employer 3 states that vocational-technical higher institutions in the state “...have a strong weakness in terms of leadership”. Trainer 5 attributed the leadership of VTE institutions by people from non-vocational disciplines as one of the factors affecting the effective implementation of VTE programmes. According to Ikpe (2010:32), the “appointment of non-professional vocational educators to both teaching and administrative positions to administer vocational education programme” is one of the challenges affecting effective delivery of VTE programmes. The view of Trainer 5 is therefore in support of that of Ikpe (2010) in terms of appointing those outside VTE discipline to head VTE institutions.

A negative perception of VTE programmes by members of the society was identified by one of the respondents as one of the constraints of the programmes. The respondent (trainer 5) states that

“...negative mindset of parents and the society on vocational education” is a contributing factor to the programmes’ challenges. Trainer 3 stated that inadequate trainees by qualification and motivation are also part of the challenges facing VTE programmes in Nigeria. The Nigerian society see VTE programmes as for those who are academically sound for other disciplines and have no other career option. The perception of VTE programmes as for the academic dropout and for those who were rejected from other disciplines has negatively affected the programmes (Zite and Deebom 2017; Oviawe 2017; Docubo 2017; Akanbi 2017; Olaitari 2015). The implication of the finding is that VTE programmes are not considered to be one of the priority programmes among other programmes and are seen to be for those who were rejected from other academic disciplines (Mima-Eyovwunu, Tene-Omadide, Yahaya and Orueygha 2020; Akanbi 2017; Oviawe 2017; Olaitari 2015; Dokubo and Dokubo 2013). The findings of the study show that the attitude of Nigerian society towards vocational education is negative. The findings is in support of existing literature in the field. Ikpe (2010) states that the attitude of the public towards VTE is poor and that it is seen as a programme for the ‘academic dropout’. Therefore, the negative societal attitudes towards VTE programmes from the findings of the study and existing literature, have not changed. The persistent negative attitude of people towards VTE programmes should be the reason for Nwosu and Micah (2017) to advocate for launching of campaign against negative public perception of the programme by creating public awareness of the importance of the programmes.

5.1.2.0 VTE Institutions and industry

In this section, the findings of the study are presented under two headings vis-à-vis industries and VTE facilities and the role of industries in VTE. In the first heading, the findings on industries and VTE facilities were combined with that of industries’ level of satisfaction of VTE graduates.

5.1.2.1 Industries and VTE facilities

The respondents to the study identified that there is a great difference in the equipment, tools, and machines between those that are used in VTE institutions and those that are found in the industries. Most of the respondents shared the same view on the disparity in the facilities in VTE institutions and that of the industries. Trainer 1 stated thus: “Presently, there is a sharp difference between what we have in the schools and the industries because the facilities and machines used in schools are inadequate when compared to the ones in the industries”. The trainer added that the industries have

modern equipment which the VTE institutions do not have. Trainer 3 stressed that the mismatch is in technology and that the facilities which are being used in the industries are not available in vocational institutions. Trainers 6, 7, 8, and 9 are in support that the facilities in the industries are far better and sophisticated compared to those in the VTE institutions.

The views of the trainees were not different from those of the trainers about the available facilities in VTE institutions and those found in the industry. Trainee 4 stated that "...most of the equipment used in schools is not in any way comparable with what you find in the industries in terms of efficiency and sophistication". Trainee 2 added that "...available machines in this institution are obsolete when compared to the industries and practical materials are not there". Yaro and Cheledi (2012) state that the facilities in VTE institutions in Nigeria are qualitatively and quantitatively inadequate. In addition, Serumu (2015) described the infrastructure and equipment in VTE institutions in Nigeria as inadequate and obsolete.

The disparity in the machines, tools and equipment used in the training of trainees and those used in the industry propelled employer 5 to state that "The graduates are not the types of graduates the industries will readily accept because there is really a serious gap in terms of practical performance between what is required of the graduates in terms of the number of years spent and the level of skills acquired". The level of satisfaction of most of the employers that were interviewed shows that they are not satisfied with the level of practical skills acquired by the graduates of VTE programmes. This could be due to lack of training facilities inherent in VTE higher institutions (Mima-Eyovwunu *et al.* 2020; Zite and Deebom 2017; Okoye and Arimonu 2016; Ayonmike, Okwelle and Okeke 2015; Bisalla and Adeyemi 2014; Ojimba 2012; Nwogu and Nwanoruo 2011; Puyate 2008). Employer 2 states that the level of satisfaction of the performance of graduates of VTE programmes that were employed in the industries is very low. The respondent attributed the poor performance of the graduates to the disparity in the type of equipment and materials used in the training of the graduates in their home institutions. For the graduates to be accepted in the industry, employer 4 stated that the graduates must be retrained by the industry to be able to fit into the system as competent workers.

5.1.2.2 Role of industries in VTE

As a way of seeking for the solution on how to bridge the gap between the acquired skills of VTE graduates and that which are needed by the industries, the researcher asked a question on what should

be the roles of the industries in the effective delivery of VTE programmes? The results are presented and analysed as follows:

The majority responded that industries should assist in the practical training of trainees and that of the trainers of VTE programmes. Trainer 5 stated that the industries should assist in the training of trainees to bridge the practical skills gap. The views of trainers 2, 3, 4, 9 and 10 are the same as that of trainer 5. The views of employers 1 and 3 are that the role of the industry should be extended to the retraining of the trainers in the VTE institutions. Employers 2, 4, and 5 stressed the need for the industries to be involved in the practical training of VTE trainees. Employer 5 states that “The industries should show some commitment by allowing students to come for industrial training”. This statement is an indication that why some industries are willing to accept VTE trainees into their industries for industrial attachment; others may not be willing. The employer might have interacted with trainees who might have suffered rejection in some industries in the past before meeting with them. However, the full involvement of industries in the training of VTE trainees may have a great impact in improving the delivery of VTE programmes. Akanbi (2017:7) states that “...poor private sector participation in the implementation of TVET programmes” is one of the challenges of the programme.

Trainees 2, 3 and 4 saw the involvement of industries in their practical training to be helpful. Trainee 3 states that “The industries help to expose us to those aspects of practical training with machines that cannot be found in our institutions”. The findings show that the involvement of the industries in the practical training of VTE trainees is not new but needed to be strengthened and emphasized.

The strong synergy between the industries and VTE institutions is needed to strengthen the industries involved in the practical training of trainees and that of the trainers. Trainers 5, 7, 8 and 9 had the same view that the existing synergy between the industries and institution is poor and needed to be improved upon. Trainer 9 states that “The level of cooperation is fair but not as expected, because many of the industries do not accept students on industrial attachment”. Trainee 3 states that their practical training is inadequate. As for trainee 4, “The training in terms of time scheduled for workshop practice is limited”. This might have prompted employer 1 to state that the institutions must create more time for the practical training of the trainees for acquisition and consolidation of skills.

Deficiency in practical skills of VTE graduates compelled trainer 4 to state that “The students have not possessed the required skills that will enable them to be self-reliant”. This could be the reason for the

statement of trainer 2 that “The vocational higher institutions in Delta State in terms of meeting the demand of the labour market is on the average”. The views of employer 3 are that the VTE institutions in the state “...seem not to be achieving the aim of the programme”. The implication of this is that there are areas where the programme is making progress despite the challenges. For example, the graduates of the programme have been able to further their education from first degree to second and to third which is one of the goals of the programme.

5.1.3 Improving VTE delivery

This section deals with the findings and analysis of the results of the interviews under the last four emergent themes of the study in table 4: VTE and industry synergy, VTE status in Delta State, curriculum planning and review, and improving VTE delivery. Vocational and technical education programme in Nigeria which apply to Delta State is facing a lot of challenges. In search of what should be done to improve the delivery of the programmes, the researcher asked for the strategies to be adopted for effective delivery of VTE programmes in the state. Below are the results of the study.

In response to the strategies for delivery of VTE programmes, trainee 1 advocated for the involvement of industries in the provision of “modern facilities”. Facilities has been identified as a major factor impacting delivery of VTE programmes by the respondents of the study and in available literature in the field (Mima-Eyovwunu *et al.* 2020; Akanbi 2017; Zite and Deebom 2017; Nwosu and Micah 2017; Dokubo 2013). Trainee 2 stated that “the level of cooperation between staff i.e., trainers and other technical staff in the workshop is very low”. This has a far-reaching implication in the delivery of VTE programme which require teamwork. Teamwork is therefore required as a strategy for the improvement of VTE delivery. The need for synergy between VTE institutions and relevant industries was emphasized by trainee 3 as a strategy for improving VTE delivery. The trainee stated that the industries help in exposing them more to the practical aspect of their fields during industrial attachment. The view of the trainee is in support of Akanbi (2017) who identified poor private sector participation in the implementation of VTE programmes as one of the challenges of VTE programmes. Therefore, synergy between the private sector and VTE institutions should be considered as a strategy for improving VTE delivery.

Synergy with relevant industries will boost the practical training of VTE trainees and equip them with the necessary practical skills for the world of work. Trainee 3 stated that the practical training being offered

by VTE institutions is not adequate for them to function efficiently in the labour market. It is, therefore, necessary to equip trainees with adequate practical training which the synergy with relevant industries would effectively carry out. The statement of employer 1 which states that “the industries should assist in training the students” suggest that the statement will address the issue of inadequate practical training offered by the VTE institutions to their trainees, thereby improving the delivery of the programmes. The findings of the study support that of UNESCO-UNEVOC (2018) which state that the strengthening of the involvement of industries in the training programmes of VTE trainees would enhance their practical proficiency and equip them with the necessary skills for the world of work.

Most of the respondents subscribed to the adoption of procurement of necessary equipment for the institutions. Employer 1 stated that “...more equipment should be procured for the schools”. This equipment as described by employer 2 should be “...proper”. Employer 4 added that the institutions should improve on the types of facilities they have. The need for VTE institutions to improve on their facilities has become necessary as Olutope (2014:4) had observed that “...the condition of infrastructural facility in our institution is far below expectation of what is required to enable students acquire sufficient and robust learning skills and competencies that could make them self-sufficient, employable and entrepreneur oriented individual...”. The implication of the finding is that the facilities needed to be upgraded in addition to procurement of new ones to meet the training needs of the trainees.

Trainees 1, 2 and 4 hold the same view as that of the employers about facilities. Trainee 2 states that in addition to the provision of more equipment, “More focus should be given to practical training through the provision of modern facilities”. The unavailability of modern facilities is the cause of lack of access to modern equipment for training of trainees which Chinedu-Ali *et al.* (2020) had identified as one of the major hindrances to effective implementation of technical vocational education and training. Therefore, the strategy of provision of modern facilities would lead to improvement in the delivery of VTE programmes.

The views of trainers 2, 5, 9 and 10 were the same with the views of employers and trainees about facilities. Trainer 5 stated that “Modern equipment that matches the current trends should be supplied” to VTE institutions. Trainer 10 emphasised that there should be “...provision of all necessary equipment and facilities that will make teaching and learning easy and making both learners and instructors comfortable in the teaching and learning environment”. The views of the respondents depict insufficient

equipment that is needed for effective programme delivery, mirroring the finding of Yaro and Cheledi (2012) regarding inadequacy of equipment in VTE institutions in Nigeria.

Provision of adequate funds was advocated by employers 1 and 5; trainers 1, 2, 3, 4, 7 and 10; and trainee 4. Their views are that more funds should be made available for the equipping of VTE institutions with the required facilities to improve delivery. Their views on the provision of funds were similar. However, a few of them went further to specify how to generate more funds for the effective implementation of VTE programmes. Employer 1 states that “The funds could be obtained from vocational education tax and subvention from government and donors”. Employer 5 added that “...the industries should be part of the funding of these institutions”. Trainee 4 states that “government should give more support in terms of funding”. As for trainer 1, “The government should increase the funding of the vocational-technical institutions”. The trainer added that the individual members of the public, non-governmental organisations (NGOs) and the industries should be involved in the funding of VTE programmes. Trainer 7 supported that “The industries and some philanthropists should help to fund vocational education”. The results of the study show that diversification of source of funding VTE programmes as a strategy would ameliorate effective delivery of VTE programmes. The issue of funding has been a major challenge that researchers in the field of VTE have identified as one of the key factors affecting effective delivery of the programmes (Zite and Deebom 2017; Okoye and Arimonu 2016; Ayonmike, Okwelle and Okeke 2015; Serumu 2015; Ojimba 2013; Yaro and Cheledi 2012; Nwogu and Nwanoruo 2011). The findings of the study on ways of funds sourcing will lead to provision of necessary resources for effective delivery of VTE programmes.

The strategy of training and retraining of VTE trainers was adopted as an effective means of improving VTE delivery by six respondents of the study (employers 4 and 5; trainees 1, 2 and 4; and trainer 5). Employer 4 in addressing the VTE institutions states that “they should be retraining their teachers so that they will learn the new techniques”. Employer 5 added that “the teachers should be retrained to meet the contemporary challenges of the current time”. Trainer 5 states that VTE trainers should be trained on the use of modern equipment that will be procured for the institutions for effective training of trainees. Trainee 1 states that “The trainers should be retrained with modern equipment”. The view of trainee 4 that “...room should be opened for more staff training” in addition to that of the other respondents on the issue of training and retraining of VTE trainers is an indication that the trainers lack

practical skills needed for effective programme delivery. According to Okoye and Arimonu (2016), the training of VTE staff in Nigeria is poor. The poor staff training is responsible for the lack of needed practical skills for effective VTE delivery (Micah 2017; Yaro and Cheledi 2012; Ojimba 2012). Okoro (2011:236) states that “teachers are not properly trained to handle the equipment and this in effect affects the quality of students produced”. In addition, the strategy of retraining VTE trainers in the findings of the study is in support of that of Nwosu and Micah (2017) who state that VTE institutions should give training that would impart technical knowledge and vocational skills that are necessary for self-reliance economically.

Four respondents of the study were of the view of employing qualified teachers (trainers) as a strategy to improve VTE delivery. Trainer 5 states that “Qualified teachers should be employed to teach vocational education programmes”. The trainer added that instead of using physics teachers to teach vocational subjects, qualified vocational teachers should be employed. Employer 2 states that VTE institutions need to employ “...qualified teachers”. The qualified teachers, according to employers 4 and 5, should be competent in the use of modern facilities to teach trainees. The responses of the three employers and one trainer show that the VTE institutions are experiencing a shortage of qualified teachers and, as a result, some of the teachers that are being used are not qualified. The shortage of qualified VTE trainers might be responsible for the engagement of other qualified teachers that are not VTE experts to alleviate the shortage. The shortage of qualified VTE personnel was also observed by Nwosu and Micah (2017) and their observation prompted them to state that there is man-power deficiency in VTE institutions. The issue of shortage of qualified VTE trainers seems to be a long-standing challenge as earlier researchers in the field had also identified that there are not enough qualified VTE trainers in VTE institutions (Bisalla and Adeyemi 2016; Serumu 2015; Seyi 2014; Yaro and Cheledi 2012; Egbo 2011; Nwogu and Nwanoruo 2011; Puyate 2008). Odo *et al.* (2017) described the shortage of vocational technical teachers as ‘acute’.

Four respondents mentioned the provision of practical materials (consumables) for trainees to practice with to improve VTE delivery. Employer 4 states that “...enough materials should be provided to enable the students to practise”. Trainer 1 states that “...practical materials should be made available for training”. Trainer 7 holds the same view of making consumables available for practice. The identification of inadequate training material in VTE institutions by Akanbi (2017) gave credence to the findings of the

study. Kemevor and Kassah (2015:77) state that “Technical and Vocational institutions require workshops, tools, equipment, and materials for demonstration and practical works”. The results depict dearth of consumables for practical activities in the institutions. The unavailability of consumables for practical may be due to shortage of funds for its purchase. The implication would be the use of alternative to practical which is theorising of the practical component of the course. This will deprive the trainees from the training of the practical experience they are supposed to have acquired from the actual practical activities using real materials as consumables.

Three of the trainees are of the view that practical training periods should be increased for skills acquisition and retention. Trainee 3 states that “...more practical with modern facilities should be employed to enable the students to be more educated in terms of practical skills”. Trainees 1 and 3 hold the same view of “...more time for practical”. The response of the three trainees portrays that their practical periods are not enough for acquisitions of practical skills that are needed to be self-sufficient in their chosen vocations. The view of the respondents is in support of Mima-Eyovwunu *et al.* (2020) who state that the time allotted to the students’ industrial work experience scheme is insufficient. According to Oviawe (2017), there is lack of practical demonstration and exposure of VTE trainees to the world of work. Practical demonstration and exposure would be possible when there is adequate provision of instructional materials which Ayonmike, Okwelle, and Okeke (2015) identified as one of the improvement strategies for addressing the challenges of VTE programmes in Nigeria. Egbo (2011:14) states that “Government should provide the necessary resources, materials and tools that are required to teach effectively. It is impossible to deliver 21st century education with 19th century tools”.

The good working environment was identified by three trainers as an improvement strategy for VTE delivery. Trainer 3 states that “The learning environment should be friendly, should be accommodating, hazard-free, and should be devoid of various lacks such as infrastructure, facilities, human capital and electricity”. Trainer 5 went further to explain who should make the environment conducive by stating that “...government should provide a good working environment such as a good and well-equipped workshop”. Trainer 10 added that the good learning environment should be that which would make “...both learners and instructors comfortable”. The views of the respondents show that the working environment is not conducive for effective teaching and learning. The description of the environment as

not conducive could be due to the lack of facilities and resources for the effective delivery of the programme.

The issue of power shortage in Nigeria is a serious challenge because most of the VTE equipment, machines and tools in use are electrically powered (Mima-Eyovwunu *et al.* 2020). Employer 4 implored VTE administrators to address the problem of power shortage. Trainers 2 and 4 advocated for uninterrupted power supply as a strategy for effective implementation of VTE programmes. Trainer 2 states that “There should be the regular power supply for the students to power the machines to practise what they have learnt”.

The views of employer 1 and trainee 1 on how to improve VTE delivery is to build standard vocational schools and equip the existing ones. Employer 1 added that “The government should open a training centre where graduates will be trained free of charge”. The two responses portray deficiency in the existing vocational institutions. A standard vocational school without trainers and trainees would be incomplete. Therefore, whatever needed to be done to motivate the trainers and trainees should be done are the views of trainers 2, 3, 7 and 10. Ikpe (2010:32) states that “lack of motivation and poor conditions of service for technical instructors who should implement policy on technical-vocational education” is one of the challenges affecting the growth of VTE in Nigeria. Motivation was emphasized for VTE instructors by Ikpe (2010), but the respondents of the study are of the view that it should be extended to the VTE trainees as well. Trainer 2 states that “...both the trainees and trainers need to be motivated”. Their responses show the tendencies of reduction in the number of trainers who may leave teaching for other more profitable ventures is high. Motivation would lead to the retention of teachers and the attraction of more students (trainees) into the programmes. This could be done through an increase in the salary of trainers and granting of scholarships to trainees if funds are made available.

Five respondents of the study are of the view that the policy and curriculum of VTE programmes should be reviewed to meet the needs of society. Coonan and Pratt-Adams (2018) state that there is need to design a curriculum that will prepare graduates with needed skills for employability in their various career for job readiness in the United Kingdom. According to Okoye and Okwelle (2014), the curriculum of VTE in Nigeria placed more emphasis on theoretical academic excellence rather than skills acquisition that would prepare the graduates for paid or self-employment. The need for review of VTE curriculum is important as some researchers in the field had adjudged the present VTE curriculum to be inadequate

(Bisalla, and Adeyemi 2016; Okoye and Okwelle 2014; Yaro and Cheledi 2012). In relation to industries, Dokubo (2017) states that the curriculum does not reflect the needs of industry. Mima-Eyovwunu *et al.* (2020) and Akanbi (2017) described VTE curriculum as 'outdated'. Employer 5 states that "The curriculum does not reflect what the students supposed to meet after graduation". The employer added that "the institutions should re-plan their curriculum to reflect what is obtainable outside the school". The statement of the employer had the implication of VTE graduates lacking employability skills. Employer 3 added that "...what can be done to improve the situation of VTE in Delta State is a curriculum review that will involve all stakeholders". Trainer 5 complained that "The curriculum is overloaded with theoretical content instead of contents that have to promote the use of hand and brain". The trainer added that "The curriculum content should be more practical instead of theory". Trainee 1 added that the "...curriculum should be planned in collaboration with relevant industries". Trainer 8 is of the view that "Government should come up with policies that will make technical education to be better in Nigeria". The results show that there are some lapses with the present VTE curriculum. It also indicates the neglect of some stakeholders in its planning. This could be deduced from the views of trainee 1 that the industries should be fully involved in the planning of the VTE curriculum. The findings show that the industries are not fully involved in the planning and review of the VTE curriculum. The full involvement of industries may mitigate the skill gap between that which the VTE institutions are delivering and that which are required by the industries.

5.2.0 Presentation of Questionnaire Results

Five open-ended questions were administered to 83 respondents (employers, trainers, and trainees) of the study and 74 were retrieved (see Table 2). Results of the study were presented and analysed based on the themes that emerged from the responses of the entire respondents to the open-ended questionnaire items.

The results of the frequency and percentage (%) proportion of total responses on the factors affecting the effective implementation of VTE programmes, strategies for effective delivery of VTE programme, factors affecting quality of VTE programmes and persons to be involved in the curriculum planning and review are summarised in Tables 5-9.

5.2.1. Factors affecting the effective implementation of vocational-technical education programmes in higher institutions

Question 1: What are the top three factors affecting the effective implementation of VTE programmes in higher institutions in Delta State, Nigeria?

Table 5 Frequency and percentage (%) proportion of total responses on factors affecting the effective implementation of VTE programmes

Factors affecting effective implementation of vocational technical education programmes	Frequency	Proportion (%)
	Inadequate resources	105.00
Insufficient funds	55.00	26.07
Poor planning and implementation	18.00	8.53
Misconception about VTE and low enrolment	13.00	6.16
Political instability and poor remuneration	11.00	5.21
Inadequate training and retraining of instructors	6.00	2.84
Inadequate VTE curriculum	3.00	1.42
Total	211.00	100.00

The table above shows the factors affecting effective implementation of VTE programmes as identified by the respondents of the study. Seven factors were identified and the frequency of each of the factors indicated. The percentage of the various factors were calculated in respect to the total frequency as shown on the table. Some of the respondents of the study listed more than three factors and their listing was part of the result which account for the increased frequency.

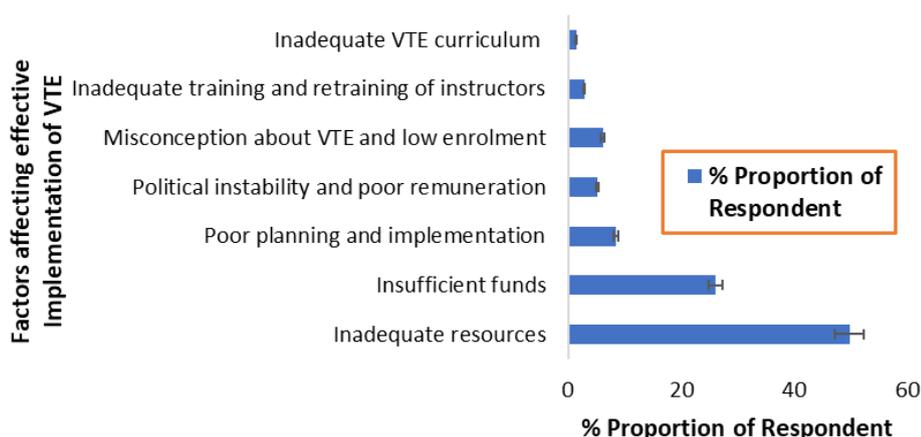


Figure 2. The effects of % proportion of total respondent on factors affecting the effective implementation of VTE programme. Error bars represent the standard deviation (SD) of the mean.

The bar graph plot of factors affecting the effective implementation of VTE programme against % proportion of total respondent and frequency and percentage (%) proportion of total responses on factors affecting the effective implementation of VTE programmes (Table 5) is shown in Figure 2.

Table 5 shows the responses of the respondents of the study on the question demanding for the top three most factors affecting the effective implementation of VTE programmes in higher institutions in Delta State. The responses generated seven important factors affecting the effective implementation of the programmes in the State. The frequency of identification of each of the factors is shown on the table above. This does not mean that those that have low frequency are less important but show the opinions of the respondents which indicate their filtering ability to identify the most three important factors amidst other factors. Therefore, it should be noted that there may be other important factors that were excluded because of the limit that was given in the open-ended question. However, some of the respondents exceeded the limit. The identified factors were grouped under seven main themes. Related factors were grouped and were treated as one which accounts for the exceeding of the total frequency beyond the number of respondents in the table. All the factors are equally important and were considered for discussion in the next chapter of this study despite the frequency of their occurrence.

Inadequate resources: Figure 2 shows the respondents view on inadequate human and material resources with a percentage proportion of 49.77%. The findings show that the institutions lack the required facilities for effective delivery of a workable VTE programme that would meet the labour market demand. This is an indication that its products (graduates of the programme) would be deficient in skills acquisitions which would lead to poor service delivery to the society that would need their services. The resources needed for effective delivery of VTE programmes are grouped under human and material resources. The human resource in this context is qualified vocational personnel which appears to be lacking from the findings of the study. The findings are in support of that of Dokubo and Dokubo (2013) who state that the inadequate number of qualified instructors is one of the challenges inhibiting the management of VTE institutions in Nigeria. In addition, Nwosu and Micah (2017) state that manpower deficiency is one of the factors affecting effective delivery of VTE programmes in Nigeria. As a practically oriented programme, its success would depend on the availability of the required infrastructure, equipment and tools which are the material resources that are required for effective delivery of the programme. However, Bisalla and Adeyemi (2016) described the available facilities in VTE institutions to be poor. According to Ayonmike, Okwelle and Okeke (2015), there is inadequate electricity supply in VTE institutions in Nigeria. The implication of this is that some of the available machines that require electric power for operation would not be fully utilised for the training of trainees. Insufficient resources

prompted Egbo (2011) to urge the Nigerian government to provide the necessary resources (human and material) that are required to teach effectively.

Insufficient funds: Figure 2 shows the view of the respondents on insufficient funds with a percentage proportion of 26.07%. It was second of the most important factors impacting the delivery of vocational and technical education programmes in the state that were identified by the respondents of the study. The provision of insufficient funds for the execution of VTE programmes as identified by the respondents of the study could be responsible for the poor implementation of the programmes in the state. The finding is in support of that of most researchers in the field of vocational and technical education programmes in Nigeria which is applicable to Delta State that funding is one of the most important factors affecting the effective implementation of VTE programmes in Nigeria (Dokubo, 2017; Zite and Deebom, 2017; Nwosu and Micah, 2017; Nwogu and Nwanoruo 2011).

Poor planning and implementation: Figure 2 show the view of the respondents on poor planning and implementation with a percentage proportion of 8.53%. The findings show a dissatisfaction of the respondents on the present VTE programmes in the state and attributed the programmes' deficiency to planning and implementation related factors. The finding is in support of Serumu, (2015) who states that poor planning is one of the factors affecting implementation of VTE programmes in Nigeria.

Misconception: Figure 2 show the view of the respondents on misconception about VTE programmes with a percentage proportion of 6.16%. This factor is one of the inhibiting factors that is affecting various aspects of VTE programmes. This is an indication of discouraging some of the highly intelligent students from enrolling into any of the programmes. The misconception of VTE programmes could be responsible for candidates' preference for other conventional educational institutions offering law, medicine and arts and social science courses. Nigerian society sees VTE programmes as for average students and are left for those who were unable secure admission into other academic disciplines (Zite and Deebom 2017; Oviawe 2017; Docubo 2017; Akanbi 2017; Olaitari 2015). According to Emike, Bassey and Ushie (2013:8), "...it is generally believed that vocational technical education is meant for the dropout and never-do-well in academic work". The implication of the finding is that the perception of Nigerian society towards VTE programmes have not changed as at the time of this study. VTE programme in Nigeria has a poor professional prestige in the society which has affected the intrinsic motivation of trainers and

trainees of the programme. Professional prestige was identified by Khalaf *et al.* (2021) as one of the motivating factors in choice of a career. Therefore, misconception of the programme may lead to future shortage of trainers and trainees of the programme.

Politics and remuneration: Figure 2 show the view of the respondents on political instability and poor remuneration with a percentage proportion of 5.21%. The finding shows that the constant change in government coupled with the inconsistency of the successive government with the implementation of programmes of the previous government is affecting the effective delivery of VTE programmes in the state. The educational sector in Nigeria from the findings of the study is not only suffering from political instability as identified by the respondents but also suffering from lack of interest of political office holders/lawmakers (Bisalla and Adeyemi, 2016; Okoye and Arimonu 2016; Ojimba 2013). The implication of the findings is that neglect of political office holders has led to the underfunding of VTE programmes that gave rise to insufficient human and material resources.

Inadequate training and retraining: Figure 2 show the view of the respondents on inadequate training and retraining for instructors with a percentage proportion of 2.84%. The identification of this factor is an indication of lack of required training for the instructors for effective delivery of the programmes in the state. Vocational technical education programmes require trainers who are current with the state of the art. Trainers acquisition of state of the art would only be possible through training and retraining that is lacking in VTE institutions. The consequence of the finding would be lack of current knowledge and skills needed for their service delivery, which places the trainees at disadvantage position on graduation. From the views of human capital theory, "skill is the direct or observable application of knowledge as a consequence of education and practical experience" (Mamabolo and Myres 2020:1). Therefore, practical training is a major requirement for skill acquisition. The lack of practical training would lead to lack of experience and subsequently to lack of skill. According to Okoye and Arimonu (2016); Yaro and Cheledi (2012); and Ojimba (2012), the training of VTE trainers is poor. In addition, Serumu (2015) state that the training of VTE trainers is inadequate. The poor and inadequate training of trainers could be responsible for the skill gap in the training received by VTE graduates and that needed for their service delivery in the labour market (Akanbi 2017; Dokubo 2017; Ayonmike, Okwelle and Okeke 2015). It would, therefore,

be difficult for a poorly trained trainer to effectively train a trainee to be better than him or her without receiving further training which is the position of graduates of VTE programmes in Nigeria.

Inadequate curriculum: Figure 2 show the view of the respondents on inadequate VTE curriculum with a percentage proportion of 1.42%. The identification of the curriculum to be inadequate is a major issue as it is a blueprint that guides the programmes' implementation. Yaro and Cheledi (2012) described VTE curriculum as defective. Okoye and Arimonu (2016) state that VTE curriculum in Nigeria has little or no relationship with workplace and social needs. Ojimba (2013) and Serumu (2015) described VTE curriculum as inadequate and defective, respectively. The responses of the respondents are therefore in support of existing literature. The implication of the finding is that the VTE programmes would not achieve its goals and objectives with a defective curriculum.

These factors affect the success of any VTE programmes in various aspects. Poor planning and implementation would lead to the failure of VTE programmes (Eze, Ezenwafor and Obi 2015). Low enrolment of VTE students would lead to a future shortage of skilled manpower to feed the industries and to replace trainers for programmes' continuity (Nwogu and Nwanoruo2011). A VTE curriculum deficient in practical skills would affect the performance of the graduates of the programmes and their job prospects (Okoye and Arimonu 2016). Lack of awareness of VTE would lead to the continued misconception of the programmes and consequently discourage talented and gifted trainees that should have been trained for the technological advancement of the nation and meeting of the varying needs of the society (Serumu 2015).

5.2.2. Causes of the factors affecting the effective implementation of VTE programmes

Question two: What are the causes of the answer you gave to question one?

Table 6 Frequency and percentage proportion of total responses on perception of causes of the factors affecting the effective implementation of VTE programmes

Causes of the factors affecting effective implementation of VTE		
	Frequency	Proportion (%)
Inadequate provision of resources	12.00	11.00
Mismanagement of limited funds	33.00	30.30
Poorly trained personnel	34.00	31.20
Lack of orientation and awareness	19.00	17.40
Poor leadership style	5.00	4.60
Capital intensiveness of VTE	2.00	1.80
Poorly planned curriculum	4.00	3.70
Total	109.00	100.00

Table 6 show the responses of the respondents of the study in respect to their earlier response to question one in Table 5 and are not mere repetitions. The causes of the factors affecting effective implementation of vocational technical education programmes that were listed in Table 5 is what is presented in Table 6. For example, the first factor listed in Table 5 is inadequate resources and the cause of that factor is shown in table 6 as the first item on the table for clarity and it is inadequate provision of resources. Therefore, the first item in Table 6 is an answer to the first item in table 5. In the same way, is the 2nd to 7th items in Table 6 is the answer to 2nd to 7th items in Table 5.

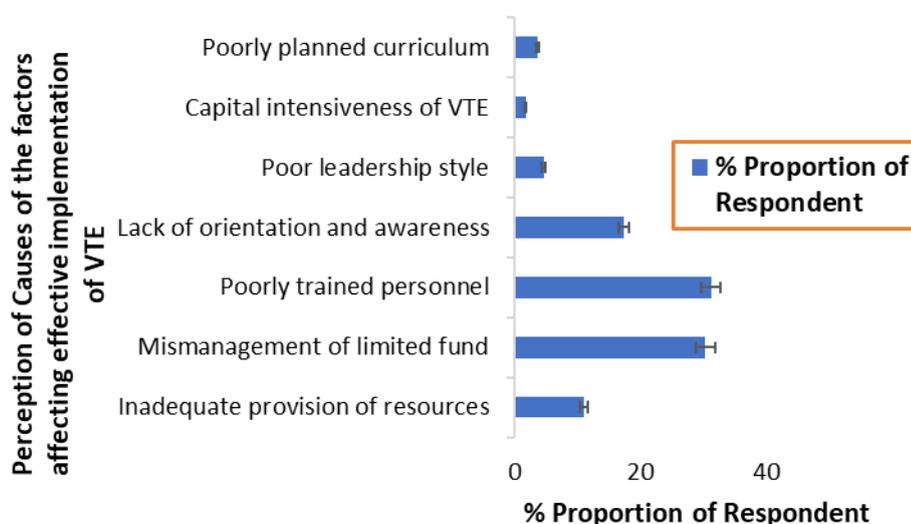


Figure 3. The effects of % proportion of total respondent on perception of causes of the factors affecting the effective implementation of the VTE programme. Error bars represent the standard deviation (SD) of the mean.

The bar graph plot of perception of causes of the factors affecting the effective implementation of the VTE programme against % proportion of total respondent and frequency and percentage (%) proportion of total responses on perception of causes of the factors affecting the effective implementation of the VTE programme (Table 6) is shown in Figure 3.

The perception of the respondents of the study on the factors affecting the effective implementation of VTE programmes was sought for with an open-ended question on the causes of the identified factors as stated above. The results of the study as shown in Table 6 were analysed below:

Inadequate provision of resources: Figure 3 shows the respondents view on inadequate provision of resources with a percentage proportion of 11.00% and this is an indication that the respondents perceived that the cause of the shortage of resources for the effective implementation of VTE

programmes is due to insufficient provision of required resources. Reviewed literature has indicated that there is inadequate provision of required resources needed for effective delivery of VTE programmes in Nigeria (Mima-Eyovwunu *et al.* 2020; Akanbi 2017; Zite and Deebom 2017; Okoye and Arimonu 2016; Ayonmike, Okwelle and Okeke 2015; Serumu 2015; Ojimba 2012; Yaro and Cheledi 2012; Nwogu and Nwanoruo 2011; Puyate 2008).

Mismanagement of funds: Figure 3 shows mismanagement of limited funds with a percentage proportion of 30.30%. This is an indication that the mismanagement of available funds is one of the causes of insufficient funds needed for effective implementation of VTE programmes. The implication of the finding is that the respondents perceived that the limited available fund is been mismanaged by those in the position of authority. The finding supports that of Okoye and Arimonu (2016) who identified misappropriation of funds in the form of bribery and corruption as one of the challenges of VTE programmes in Nigeria.

Poor training of personnel: Figure 3 shows that poorly trained personnel attracted a percentage proportion of 31.20%. This is an indication that the trainers lack adequate training that is needed for the effective training of the trainees of the programme. The implication of this is that the trainers are not well equipped with the needed knowledge and skills to prepare trainees with the prerequisites skills needed to be gainfully employed as employees in the industry or as self-employed in their areas of specialisation. There is an indication of poor programme implementation in the aspect of staff training from the findings of the study. It also shows that some of the personnel charged with the administration of VTE programmes are not competent enough to meet the required standard in the programme delivery. The findings are in support of that of Seyi (2014) who identified a shortage of qualified manpower, poor organization, and slow pace of implementation as some of the challenges of VTE programmes in Nigeria.

Lack of orientation/awareness: Figure 3 shows lack of orientation/awareness of VTE programmes with a percentage proportion of 17.40%. This is an indication that the Nigerian society has not been well oriented regarding the importance of VTE programmes. The lack of proper orientation that is evident in the negative perception of the programmes as could be seen from the responses of the respondents is the cause of misconception about VTE and low enrolment of trainees into the programmes. It is a restraint to effective implementation of the programmes in Delta State because many who may have

contributed to the success of the programme did not due to lack of proper orientation. The lack of proper orientation that is evident in the negative perception of the programmes (Nwosu and Micah 2017) is because of lack of awareness of the programmes' offerings and its benefits. The "...lack of understanding of respective professions" is responsible for the view of certain professions to be less important than others (Maddocks *et al.* 2018:55). Dokubo (2017) states that VTE is held in low regard in Nigeria. In addition, Serumu (2015) states that the negative attitude of the public towards VTE programmes is because of a lack of proper orientation and that it is one of the challenges affecting effective delivery of the programmes.

Poor leadership: Figure 3 shows poor leadership style with a percentage proportion of 4.60%. This is an indication that the respondents attributed the cause of political instability and poor remuneration to the poor leadership style of successive administrators and government officials in the state. There is evidence of poor leadership in higher institutions due to change in government and abandonment of educational projects of formal administrators by the new ones (Serumu 2015; Seyi 2014; Yaro and Cheledi 2012; Nwogu and Nwanoruo 2011). Therefore, there is lack of continuity in government policies by the leadership of educational institutions which has led to poor implementation of VTE programmes (Bisalla and Adeyemi 2016; Ayonmike, Okwelle and Okeke 2015).

Capital intensiveness: Figure 3 shows that the capital intensiveness of VTE attracted a percentage proportion of 1.80%. This is an indication that the respondents of the study perceived VTE programmes to be that which requires lots of capital for its establishment and management. The inadequate provision of needed funds is responsible for the shortage of needed resources for the training and retraining of personnel that are needed for the implementation of VTE programmes. Training and retraining of trainers require material and financial resources which has been identified by researchers to be inadequate (Chinedu-Ali *et al.* 2020; Mima-Eyovwunu *et al.* 2020; Allen 2020; Aina 2020; Kemevor and Kassah 2015; Ojimba 2013; Ikpe 2010).

Poorly planned curriculum: Figure 3 shows that the poorly planned curriculum had a percentage proportion of 3.70%. The respondents of the study attributed the inadequate VTE curriculum to poor planning. This indicates that the curriculum is deficient and needed to be reviewed to the present demands of the labour market in various fields. The finding is in support of that of Aina (2020:35) who

states that “several research studies indicate that the curricula are no longer relevant to the teaching of the present century”. Aina (2020) added that the present VTE curriculum is outdated.

5.2.3 Strategies for effective delivery of VTE programmes

Question three: What strategies would you like to see adopted to support the delivery of VTE programmes in Delta State, Nigeria?

Table 7 Frequency and percentage proportion of total responses on strategies for effective delivery of VTE programmes

Strategies for effective delivery		
	Frequency	Proportion (%)
Adequate and proper utilization of fund	17.00	21.79
Training and retraining of teachers	14.00	17.95
Recruitment of qualified personnel	10.00	12.82
Good VTE policy implementation	9.00	11.54
Well-equipped workshop with ICT	7.00	8.97
Supervision and monitoring	6.00	7.69
Awareness creation	5.00	6.41
Good leadership/resource management	4.00	5.12
Motivation and incentives	4.00	5.12
Industrial partnership	2.00	2.56
Total	78.00	100.00

Table 7 shows the strategies that were identified by the respondents to be adopted to support effective delivery of VTE programmes. The table shows 10 strategies, the frequency of its identification and the respective percentage proportions.

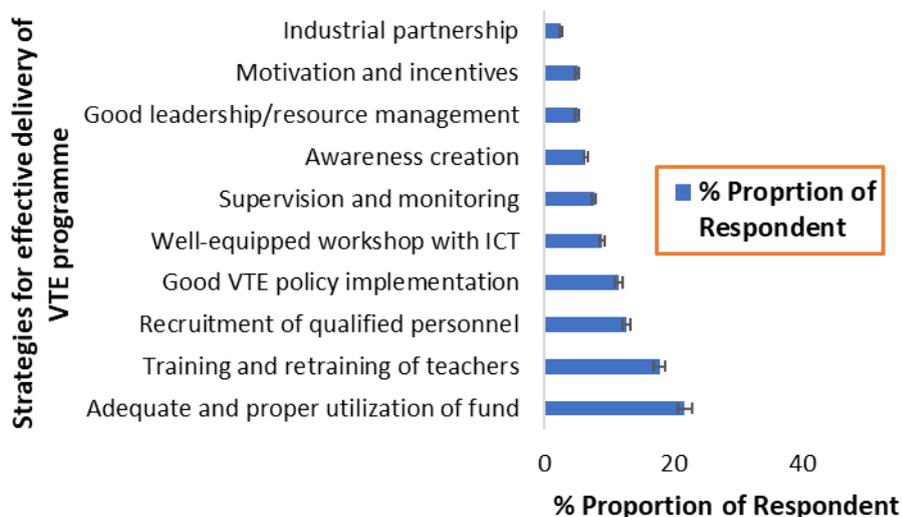


Figure 4. The effects of % proportion of total respondent on strategies for effective delivery of VTE programme. Error bars represent the standard deviation (SD) of the mean.

The bar graph plot of strategies for effective delivery of VTE programme against % proportion of total respondent and frequency and percentage (%) proportion of total responses on strategies for effective delivery of VTE programme (Table 7) is shown in Figure 4.

The responses of the respondents of the study on the strategies to be adopted for effective delivery of VTE programmes are presented in Table 7 above. The results are presented thus:

Fund utilisation: Figure 4 shows that adequate and proper utilisation of funds was advanced as one of the key strategies to be adopted. The strategy attracted the highest percentage proportion of 21.79%. This is an indication that adequate funding and close monitoring of fund utilisation for the purpose it was budgeted for would boost the delivery of VTE and the achievement of its goals and objectives. This strategy would be achieved with adequate measures in place to check and balance in the system. This will reduce the tendency of misappropriation or diversion of funds meant for the delivery of the programmes at the institutional level. The misappropriation or diversion is aided by bribery and corruption that was identified by Okoye and Arimonu (2016) as part of the challenges affecting effective delivery of VTE programmes in Nigeria. Corrupt practices are carried out by some government functionaries in Nigeria with impunity and Otara (2012) described them as an autocratic and corrupt government. Aina (2020:37) states that "...governance is one of the major problems in Africa which is the root cause of high rate of corruption in Nigeria". The findings of Aina (2020) are in support of Akanbi (2017) who states that poor management of funds and corruption are part of the challenges affecting the delivery of VTE programmes in Nigeria.

Training and retraining:- Figure 4 shows the training and retraining of teachers with a percentage proportion of 17.95%. This strategy would lead to the effective delivery of VTE programmes as the teachers (trainers) occupy central position in the training process of the trainees. Learners (trainees) learn skills from the teacher who is the trainer. This is an indication that the quality of the trainers will affect the quality of the trainees at the end of the training programme. The finding has the implication of training and retraining of trainers for update of knowledge and skills because of new discoveries from emerging future research findings. The need for updating of knowledge and skills prompted Maddocks *et al.* (2018) to recommend in-service training of personnel for effectiveness and efficiency in the

discharge of their duty. Therefore, the strategy has become necessary as the issue of training and retraining has been identified by several authors as one of the challenges of VTE programmes in Nigeria (Dokubo 2017; Ayonmike, Okwelle and Okeke 2015; Okoye and Arimonu 2016; Serumu 2015; Yaro and Cheledi 2012).

Qualified personnel: Figure 4 shows the recruitment of qualified personnel as a strategy for effective delivery of VTE programmes with a percentage proportion of 12.82%. The use of qualified personnel would lead to the achievement of goals and objectives of programmes offerings through knowledge impartation. The findings support that of Nwogu and Nwanoruo (2011) who identified poor emphasis on the practical aspect of TVET and lack of skilled manpower among the challenges of the programmes. Therefore, giving more practical training and recruiting qualified staff could lead to the effective delivery of the VTE programmes.

Good VTE policy implementation: Figure 4 shows Good VTE policy implementation that attracted a percentage proportion of 11.54% as one of the strategies to be adopted. This strategy for the effective delivery of VTE programme is very vital as it may possibly determine the extent to which the goals and objectives of the programme will be achieved. The implication is that the implementation strategy of any educational programme especially that of VTE would be a determinant factor of its success or failure. Repositioning of VTE programme would only yield a good result with a good implementation strategy. Poor policy implementation would lead to poor programme delivery. Seyi (2014) states that poor policy implementation is one of the major factors affecting effective delivery of VTE programmes in Nigeria.

Workshop: Figure 4 shows a well-equipped workshop with ICT as a strategy for effective VTE delivery with a percentage proportion of 8.97%. This strategy is imperative as the ill-equipped workshops would not survive in this modern technological age with continuous change in taste and fashion of the society in which the programmes are meant to serve. The strategy implies introducing compulsory ICT training into the programme of study. The strategy of equipping the workshop with ICT becomes necessary as existing literature has shown that VTE institutions are ill-equipped (Nwosu and Micah 2017; Akanbi 2017; Dokubo 2017; Bisalla and Adeyemi 2016; Olaitari 2015; Serumu 2015). Effective delivery of VTE programmes would only be possible with availability of necessary facilities which include a standard workshop with the required built-in facilities. The practical nature of VTE programmes made it

compulsory that a well-equipped workshop is needed for its delivery. Therefore, the absence of a well-equipped workshop will affect the effective delivery of any VTE programme.

Supervision and monitoring: Figure 4 shows supervision and monitoring strategy with a percentage proportion of 7.69%. The implication of this is that VTE institutions should not be left to operate in isolation of other stakeholders. There should be regular supervision and monitoring from different agencies, organisations and groups who are part of the stakeholders. The diligence of these monitoring teams would make a positive difference in the delivery of the programmes by the operators. Serumu (2015) states that weak monitoring and evaluation are part of the challenges affecting effective implementation of VTE programmes in Nigeria. Therefore, supervision and monitoring strategies would resolve the challenge and would lead to improvement in the delivery of the programme.

Awareness creation: Figure 4 shows awareness creation as an identified strategy by the respondents with a percentage proportion of 7.69%. This is an indication that the negative attitude of the society (Oviawe 2017; Dokubo and Dokubo 2013) on VTE programmes in Delta State could be corrected through awareness creation on the importance of the programmes. Otherwise, students' enrolment may continue to decrease and might lead to a shortage in supply of VTE experts to feed the industries and to meet the technological needs of the society.

Leadership/resources management: Figure 4 shows good leadership/resources management as a strategy to be adopted with a percentage proportion of 5.13%. The identification of this strategy implies that there may be mismanagement of limited resources that were made available for implementation of the programmes in the past. The strategy also implies the careful selection of qualified credible leaders with a track record of good leadership quality. Besides, it implies that VTE institutions in Delta State are faced with leadership challenges, which might have prompted the identification of the adoption of the strategy by the respondents of the study. Odo *et al.* (2017) state that VTE institutions in Nigeria are faced with leadership challenges. This might have been the reason for the suggestion of the adoption of this strategy. Okoye and Arimonu (2016) state that embezzlement of funds meant for educational development and bribery and corruption in the education industry are part of the major challenges affecting effective delivery of VTE programmes in Nigeria.

Motivation and incentives: Figure 4 shows motivation and incentives strategy as identified by the respondents of the study with a percentage proportion of 5.12%. The motivation of trainers and trainees through in-service training of trainers, increase in salary and awards of scholarship would improve VTE programmes delivery in the state. Besides, carrying out the needs assessment of staff to identify what would be considered appropriate to serve as motivational incentives would be needed. The findings of the study and reviewed literature show that lack of interest coupled with the negative attitudes of Nigerian society are responsible for mismanagement or diversion of funds meant for VTE programmes (Bisalla and Adeyemi 2016; Ojimba 2013). Therefore, the use of motivation and an incentive strategy could raise the interest of the operators of VTE programmes and reduce corrupt practices of fund diversion.

Partnership with the industry: Figure 4 shows industrial partnership with a percentage proportion of 2.56%. This strategy implies seeking for the full support and cooperation of the operators of the various industries in the state to partner with for effective VTE delivery. The strategy of industrial partnership is in support of. Akanbi (2017) who identified poor private sector partnership in the implementation of VTE programme to be affecting the programme delivery. The industry is known for practical delivery while educational institutions are known for theoretical delivery (Yildirim *et al.* 2021). Therefore, partnership of VTE institutions with the industries would bridge the skills gap between what the VTE graduates possesses and that needed by the industries.

5.2.4. The most important factors impacting the quality of VTE programmes

Question four: What are the most important factors impacting the quality of VTE programmes?

Table 8 Frequency and percentage proportion of total responses on the most important factors impacting the quality of VTE programmes

The most important factors impacting the quality of VTE programmes		
	Frequency	Proportion (%)
Manpower	20.00	25.32
Facilities/modern technology	18.00	22.78
Funding	11.00	13.92
Training & Retraining	8.00	10.13
Motivational incentives	5.00	6.33
Leadership	4.00	5.06
Curriculum planning	3.00	3.80
Societal perception	3.00	3.80
Partnership	2.00	2.53
Needs of the society	1.00	1.27
Politics	1.00	1.27
Maintenance Culture	1.00	1.27

Quality assurance	1.00	1.27
Working environment	1.00	1.27
Total	79.00	100.00

Table 8 shows the 14 most important factors impacting the quality of VTE programmes as identified by the respondents of the study. There may be other factors that are equally important which the respondents may have omitted. Therefore, the identified factors may not be the only important factors impacting the delivery of VTE programmes in the state but are the most important ones as perceived by the respondents.

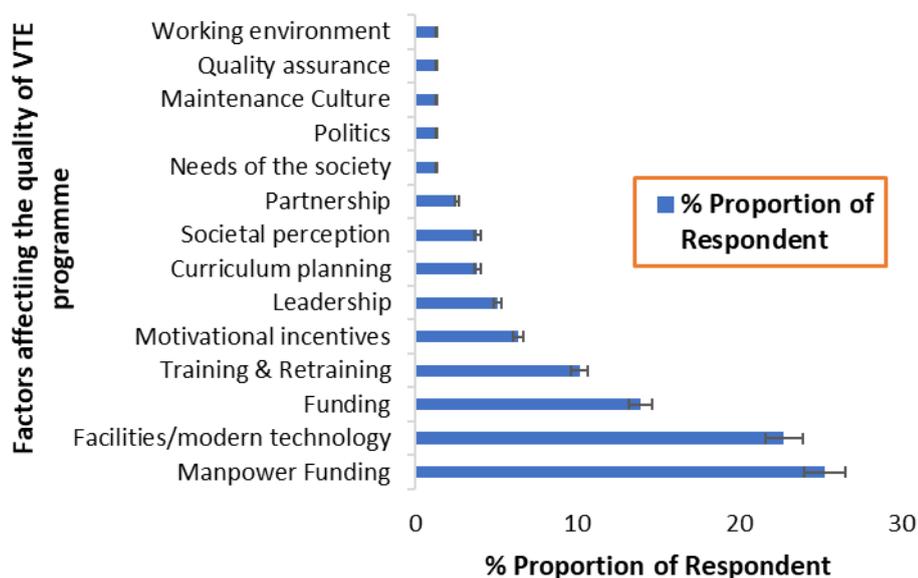


Figure 5. The effects of % proportion of total respondent on the factors affecting the quality of VTE programme. Error bars represent the standard deviation (SD) of the mean.

The bar graph plot of factors affecting the quality of VTE programme against % proportion of total respondent and frequency and percentage (%) proportion of total responses on factors affecting the quality of VTE programme (Table 8) is shown in Figure 5.

Many factors are affecting the effective delivery of VTE programmes in Delta State. However, Table 8 shows the responses of the respondents on factors having a noticeable effect on quality of VTE programmes in the state and are analysed hereunder:

Manpower: Figure 5 shows manpower with the highest percentage proportion of 25.32%. The attraction of the highest frequency of this factor among others shows the great importance that is attached to it. It, therefore, implies that the success or failure of the programme will be determined by the quality of its

manpower that is engaged in its delivery. An adequate supply of experienced qualified manpower will have a positive impact on the delivery of quality VTE programmes. Dokubo (2017) states that TVET teachers are not properly trained. Ojimba (2012) described the training of VTE trainers as being poor. Nwosu and Micah (2017) state that TVET institutions in Nigeria are suffering from manpower deficiency. The findings of the study and the existing literature in the field have established manpower as an important factor impacting VTE programmes. The view of Dokubo (2017) above suggest that there are trainers in VTE institutions who were not well equipped with the needed skills for the delivery of the programme. However, some researchers state that there is a shortage in supply of VTE trainers and that it is affecting effective delivery of the programme (Bisalla and Adeyemi 2016; Serumu 2015; Nwogu and Nwanoruo 2011). The finding of the study and reviewed literature show that poorly trained staff (Okoye and Arimonu 2016; Yaro and Cheledi 2012) or shortage of trained VTE staff (Odo *et al.* 2017) has an impact on the delivery of VTE programmes.

Facilities/modern technology: Figure 5 shows facilities/modern technology with a percentage proportion of 22.78%. The practical nature of VTE programmes demands the provision of modern equipment and facilities for its full implementation. However, the institutions in the state seem to be experiencing lack of the required equipment and facilities. Literature in the field show that VTE institutions in Nigeria lack the required facilities for effective delivery of its programmes (Zite and Deebom 2017; Akanbi 2017; Bisalla and Adeyemi 2016). Okoye and Arimonu (2016) state that inadequate facilities, curriculum that has little or no relationship with workplace and social needs are some of the challenges affecting the delivery of VTE programmes in Nigeria.

Funding: Figure 5 shows funding with a percentage proportion of 13.92%. VTE programmes are capital intensive and require more funds for effective delivery than arts education programmes. This is an indication that the effective delivery of the programmes will be determined by the availability of the required funds for its full implementation. Inadequate provision of funds would, therefore, negatively affect the delivery of VTE programmes. However, researchers in the field have identified that VTE programmes in Nigeria are underfunded (Dokubo 2017; Zite and Deebom 2017; Nwosu and Micah 2017; Bisalla and Adeyemi 2016; Okoye and Arimonu 2016; Ayonmike, Okwelle and Okeke 2015; Serumu 2015; Ojimba 2013; Yaro and Cheledi 2012; Nwogu and Nwanoruo 2011).

Training and retraining: Figure 5 shows training and retraining with a percentage proportion of 10.13%. This is an indication that training and retraining of VTE staff should be compulsory and continuous. Regular training and retraining of VTE trainers would have a positive impact on the programmes' delivery. On the contrary, lack of training and retraining will have a negative impact on the effective delivery of the programmes. Training and retraining of VTE trainers have been observed to be poor (Okoye and Arimonu 2016; Ayonmike, Okwelle and Okeke 2015; Ojimba 2012; Egbo 2011; Nwogu and Nwanoruo 2011). The poor training and retraining of VTE trainers were attributed to lack of training facilities in the various training institutions across the country.

Motivational incentives: Figure 5 shows motivational incentives with a percentage proportion of 6.33%. The implication of this is that the provision of motivational incentives such as increase in training allowances for VTE staff would have a positive impact on the delivery of VTE programmes. However, absence of motivational incentives would have a negative effect on the programme delivery due to the tendencies of staff not putting in their best that would lead to the achievement of the organisational goals. Okoye and Arimonu (2016) state that motivational incentive for VTE trainers and trainees; innovation/modern technology, are needed for the achievement of the goals of VTE programmes. Yildirim *et al.* (2021) state that motivation of students in any educational programme should continue because motivation can be lost over time as situation changes, especially in programmes that involve professional knowledge and skills.

Leadership: Figure 5 shows leadership with a percentage proportion of 5.06%. The result shows that leaders have an impact on the delivery of VTE programmes. Good leadership would have a positive impact on the delivery of any programme. Conversely, poor leadership would lead to poor programme implementation and may result in programmes failure. Leadership has been identified also in the literature reviewed as part of the challenges of VTE programmes in Nigeria (Ayonmike, Okwelle and Okeke 2015; Nwogu and Nwanoruo 2011).

Curriculum planning: Figure 5 shows curriculum planning with a percentage proportion of 3.80%. The result shows that the curriculum is an important factor that impacts the quality of VTE programmes. This is an indication that a well-planned curriculum would have a positive impact on the quality of VTE programmes should it be implemented accordingly. However, VTE curriculum in addition to its poor

implementation (Ayonmike, Okwelle and Okeke 2015), seems to be inadequate from the findings of the study and reviewed literature (Akanbi 2017; Dokubo 2017; Bisalla and Adeyemi 2016). The present VTE curriculum has been described as 'defective' because of poor delivery of the practical component of the programme as a result of lack of well-equipped workshops (Ojimba 2012; Yaro and Cheledi 2012). The implication of the finding is that good implementation strategy of a defective curriculum with poor implementation of adequate curriculum may not achieve the goals and objectives of any educational programme especially that of VTE.

Societal perception: Figure 5 shows societal perception with a percentage proportion of 3.80%. The findings show that societal perception would have an impact on VTE programmes delivery. Positive perception would have a positive effect and lead to positive attitude towards the achievement of the objectives of the programmes. Considering societal perception of VTE programmes in Nigeria, Serumu (2015) states that there is a negative public attitude towards the programme. Nwosu and Micah (2017) state that the public negative perception of VTE programmes in Nigeria has led to its neglect. According to Dokubo (2017), technical vocational education and training in Nigeria is held in low regard. In addition, Oviawe (2017) states that the recognition of VTE programmes and societal attitudes towards the programmes are poor. The finding of the study shows that the perception of VTE programmes in Nigeria is affecting the programmes delivery and the trainees' interest and motivational choice of the programme as a career.

Partnership: Figure 5 shows partnership with a percentage proportion of 2.53%. The result shows that the partnership would have an impact on the quality of VTE programmes. This is an indication that the nature and level of partnership would determine the impact it would have on the quality of programmes' delivery. The stronger the partnership, the easier it would be for the achievement of programmes' objectives. Researchers in the field have identified partnership as one the factors impacting VTE programmes and have stated that there is inadequate collaboration between tertiary institutions and organized private sector (Akanbi 2017; Serumu 2015; Emike, Bassey and Ushie 2013). The inadequate collaboration may be responsible for the observed skill gap between the acquired skills of the graduates of the programme and that which are needed in the industry where they may engage as employees because of lack of relevant employability skills.

Societal Needs: Figure 5 shows needs of society, with percentage proportion of 1 and 1.27% respectively. The finding reveals that the needs of society impact VTE programmes as one of the goals of VTE programmes is to meet the needs of society through service delivery in its various trades/vocations. Demand of the services of VTE graduates from the society would lead to an improvement in the quality of programmes delivery for the achievement of its primary goal of meeting the needs of the society. However, VTE programmes in Nigeria have been adjudged as not meeting the needs of the society (Okoye and Arimonu 2016). Akanbi (2017) states that there are poor learning outcomes due to poor learning environment. The findings of the study have the implication of involving members of the society in the planning and implementation of the programme (see chapter six for details).

Politics: Figure 5 shows politics with a percentage proportion of 1.27%. This is an indication that politics impact the quality of VTE programmes in the state. The result is an indication that the key decision-makers in the education industries in Delta State are politicians, hence politics impact the quality of VTE programmes' delivery. The key decision-makers in the education industries in Nigeria are politicians, hence politics impact the programme delivery. Dokubo (2017) states that changes in the political system are part of the challenges of VTE programmes in Nigeria which is applicable to Delta State. All the heads of higher institutions in Nigeria are political appointees and, in most cases, the appointment has been influenced by political party leaders and academic staff of the institution may not be involved in the selection process to get the best qualified and experienced head to pilot the affairs of the institution. Politics, therefore, has a great effect in the delivery of any educational programme in Nigeria which VTE is among.

Maintenance culture: Figure 5 shows maintenance culture with a percentage proportion of 1.27%. The result shows that it has an impact on the quality of VTE programmes' delivery. Good maintenance culture would prevent facilities' deterioration and positively affect the quality of programmes' delivery. It, therefore, implies that poor maintenance culture would negatively affect the delivery of VTE programmes. However, maintenance of tools, machines and equipment involves funds which has been identified to be inadequate (Mima-Eyovwunu *et al.* 2020; Bisalla and Adeyemi 2016; Yaro and Cheledi 2012; Nwogu and Nwanoruo 2011). Therefore, it would be difficult to identify the maintenance culture of the operators of the programme when the funds to carry out the maintenance seem to be lacking.

Quality assurance: Figure 5 shows quality assurance with a percentage proportion of 1.27%. The result of the study shows that quality assurance is an important factor impacting the quality of VTE programmes' delivery. It has a positive correlation with the quality of programmes' delivery when it is put in place. Nevertheless, putting quality assurance in place where corrupt practices exist may be a very difficult task (Akanbi 2017; Okoye and Arimonu 2016). Although, the Nigerian government is fighting corruption in the country, there is still much to be done as the findings of the study have shown that it is affecting the effective delivery of VTE programmes. Effective and efficient quality assurance cannot be achieved without monitoring standards in place. However, Yaro and Cheledi (2012) had observed that the monitoring standards of Nigerian higher institutions are poor. In addition, Serumu (2015) in his study entitled 'Challenges of implementing technical and vocational education and training (TVET) curriculum in Delta State colleges of education', states that the monitoring and evaluation of TVET institutions in Delta State is weak.

Working environment: Figure 5 shows working environment with a percentage proportion of 1.27%. The result shows that the working environment is an important factor that impacts the quality of VTE programmes' delivery. This is an indication that the environment would positively or negatively affect the delivery of VTE programmes. A conducive working environment would lead to good quality programmes' delivery in the absence of any other challenges. Conversely, unconducive working environment have the tendencies to reduce productivity of staff which will negatively affect the delivery of the programmes.

5.2.5. Those to be involved in curriculum planning and review

Question five: Who should be involved in curriculum planning and review?

Table 9 Frequency and percentage proportion of total responses on those to be involved in the curriculum planning and review

Those to be involved in curriculum planning and review		
	Frequency	Proportion (%)
Trainers/VTE experts	39.00	48.15
Government agencies/VTE administrators	16.00	19.75
Industries/employers of labour	7.00	8.64
Learners (Trainees)	7.00	8.64
Curriculum experts	5.00	6.17
Civil society/community representatives	5.00	6.17
Parents	2.00	2.47
Total	81.00	100.00

Table 9 above is the result of the responses of the respondents to the question on those that should be involved in the curriculum planning and review of VTE programmes for the achievement of the goals and objectives of the programmes. The identified groups are shown in the table with the frequency and percentage proportions. It should be noted that some individuals may fall into two or more groups by virtue of their training and appointment. For example, a trained curriculum expert who is teaching in VTE institution, and the same time an active member of the society with a child who is a trainee in VTE institution, falls into more than two of the groups on the table. However, it does not mean that the groups are the same. In addition, the percentage level of those to be involved in curriculum planning and review was not an issue of weighting towards involvement of some groups more than others, but a methodological consequence of using open questions in the survey.

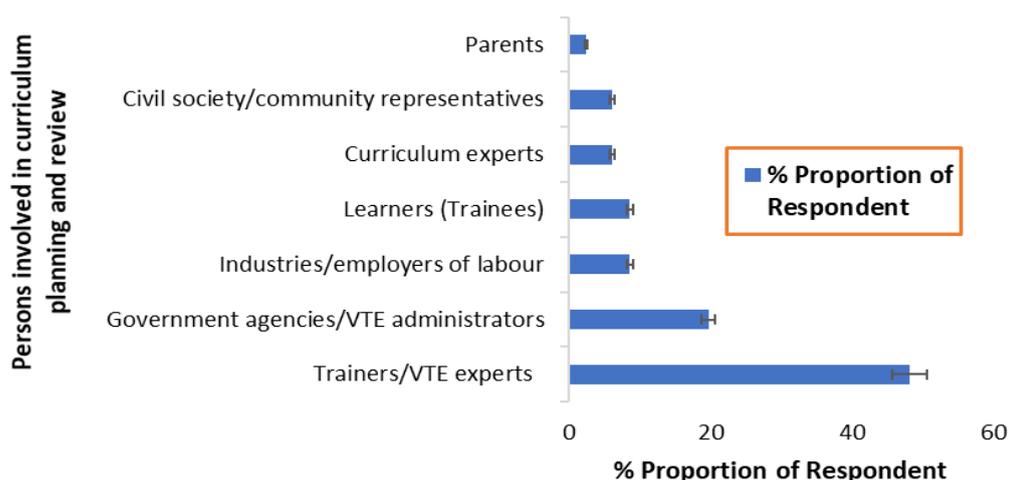


Figure 6. The effects of % proportion of total respondent on the persons involved in curriculum planning and review. Error bars represent the standard deviation (SD) of the mean.

The bar graph plot of the persons involved in curriculum planning and review against the % proportion of total respondent and frequency and percentage (%) proportion of total responses on the persons that should be involved in curriculum planning and review (Table 9) is shown in Figure 6.

The analysis of the responses of the respondents on those to be involved in the curriculum planning and review as shown in Table 9 are presented below:

Trainers/VTE experts: Figure 6 shows trainers/VTE experts with a percentage proportion of 48.15%. This shows the central position of trainers/experts in the curriculum planning and review of VTE programmes. This is an indication that the trainers who have direct contact with the trainees and part of

the institutions understand better some of the challenges of the programmes from their experience and the feedback they receive from trainees for curriculum review. It, therefore, implies that trainers should be given priority in the selection of members of the curriculum planning and review committee. The implication for the government who is solely in charge of selection of the committee is to consider VTE trainers/experts during their selection. Full involvement of teachers (trainers) in the planning and review of VTE programmes has the propensity of correcting the inadequacy of the present curriculum as observed by Bisalla and Adeyemi (2016) who found that curriculum inadequacy is one of the challenges of VTE programmes in Nigeria.

Government agencies/VTE administrators: Figure 6 shows government agencies/VTE administrators with a percentage proportion of 19.75%. Educational programmes in Nigeria which include VTE programmes are under the control of the government. This is an indication that the interest of the government agencies should be taken into consideration in the curriculum of a programme under its control. These agencies and administrators are charged with the responsibilities of making education policy. The involvement of the policymakers in curriculum planning and review of VTE programmes would lead to the inclusion of some important issues such as facilities that are needed for the effective delivery of the programmes in line with the government policy. Their involvement along with other stakeholders such as the industries and curriculum experts would inform the government in their policy formulation.

Industries/employers: Figure 6 shows industries/employers of labour with a percentage proportion of 8.64%. The direct beneficiaries of the graduates of VTE programmes are the industries/employers of labour. This is an indication that they should be involved in the curriculum planning and review of VTE programmes as part of the stakeholders. The contribution of industries as employers of labour would mean a lot in the aspect of most needed skills in the labour market which trainees are expected to possess to be gainfully employed.

Trainees: Figure 6 shows learners with a percentage proportion of 8.64%. This is an indication that trainees who are the direct beneficiaries of the programmes should be part of the planning and review of a programme that is meant for them. They could make useful suggestions that would lead to a well-planned, articulated VTE curriculum. The finding implies that trainees should be fully represented in the reviewing and re-planning of the VTE curriculum.

Curriculum experts: Figure 6 shows curriculum experts with a percentage proportion of 6.17% as those to be involved in the curriculum planning and review of VTE programmes. The finding is an indication that curriculum experts should be involved in the planning and review of VTE curriculum to use their professional expertise to harmonize the ideas of other stakeholders such as the trainers and trainees and employers. The involvement of curriculum experts would lead to the organising of the ideas into a workable document for implementation. The present curriculum has been adjudged to be defective (Okoye and Arimonu 2016; Ojimba 2012) and not meeting the needs of the society (Dokubor 2017). The skill gap in what the graduates of VTE programmes possess and that needed by the industries has been attributed to curriculum inadequacy. Therefore, the need for involvement of curriculum experts with stakeholders in the planning and reviewing of VTE programmes would resolve the issue of curriculum deficiency.

The society: Figure 6 shows civil society/community representatives as those to be involved in VTE curriculum planning and review with a percentage proportion of 6.17%. This is an indication that community representatives should be part of the VTE planning and review committee. This is because the programmes are meant to meet the needs of their immediate community and beyond. Their involvement in the programmes' planning is, therefore, imperative.

Parents: Figure 6 shows parents with a percentage proportion of 2.47%. This is an indication that parents should be involved in the curriculum planning review of VTE programmes as stakeholders. Their contributions could be useful in the production of a workable VTE curriculum that would meet the needs of learners (trainees) and society.

From the findings of the study, all stakeholders listed in table 9 above should be involved in the curriculum planning and review of VTE programmes because of the central position it occupies in the programme. Every member of the society in one way or the other depending on the products of VTE in their homes and offices and should be involved in its curriculum planning and review.

5.3 Chapter summary

The chapter presented and analysed the research findings. The interview and the questionnaire results were presented and analysed separately. The results of the study show that the VTE programme in Delta State is strong in the delivery of the theoretical aspect of the programme but weak in the delivery of the practical aspect. The weakness in the practical aspect was attributed to several factors which

were listed, among which are: lack of adequate facilities for practical lesson delivery, inadequate human, material, and financial resources needed for effective delivery of the programme. The strategies to be adopted for effective programmes delivery were enunciated. The next chapter shall combine the results from the interview and questionnaire for discussion.

Chapter Six

Discussion of Findings

6.0 Introduction

This study was conducted at a time when there was lack of skilled manpower because of the deficiencies inherent in the vocational technical education programmes in Delta State Nigeria. The deficiencies in the acquired skills of the graduates coupled with other factors such as the enabling environment account for the state of the programmes' failure in meeting the needs of the industry, society, and the graduates. The evidence of the lack of skilled manpower could be seen from the literature that was reviewed for the study in Chapter three and the findings of the study as presented in Chapter five. The applications of the researcher to the two VTE higher institutions for the conduct of the study were approved by the two institutions without hesitation having considered its importance to the present state of the VTE programmes in the state.

The contributions of the employers, trainers and trainees that were used for the study transcended mere identification of the factors affecting the effective implementation of VTE programmes, to the identification of the causes, and strategies that led to the development of a novel model in Chapter seven by the researcher for effective delivery of VTE programmes and thereby contributing to knowledge. The previous chapter presented the findings from the fieldwork that form the main basis for this discussion chapter. The discussion will address the research questions that guided the study and fulfil the objectives.

The review of literature has shown that VTE programmes are facing a lot of challenges that are affecting their effective implementation and responsible for deficiencies in the meeting of the needs of the industries and that of the trainees (Güngöri, 2020; Nwosu and Micah 2017; Zite and Deebom 2017; Akanbi 2017; Bisalla and Adeyemi 2016; Ayonmike, Okwelle and Okeke 2015). The chapter is devoted to the discussion of the findings of the study. It triangulates the results from the open-ended questionnaire and the semi-structured interviews together for detailed discussion. The results from questionnaire items one and four were combined with the findings from the interview themes on strengths and constraints of VTE programmes. Similarly, the findings from item two of the questionnaire were discussed alongside the results generated from the interview theme on VTE institutions and industries. Equally, items three and five results of the questionnaire were integrated with the interview

findings on the theme improving VTE delivery. The three sections were used to address the research questions and objectives that guided the study. The triangulation and discussion are presented below:

6.1.0 Strengths and Constraints of VTE Programmes

Vocational technical education programmes have two main components, which are theoretical and practical. The identified factors affecting the effective implementation of VTE programmes by the respondents of the study were grouped under two subheadings 'strengths' and 'constraints' of the programme for detailed discussion.

6.1.1 Strengths of VTE Programmes in Delta State

The respondents of the study attributed the theoretical expertise of the trainers as a strength. The trainees, trainers and employers that were used for the study agreed that VTE higher institutions in the state are delivering a high-level theoretical knowledge which is one of the important aspects of the programme. The theoretical aspect of the programme is very important for the trainees to understand the underlying principles of the concepts of their programmes which are practically oriented. Theoretical knowledge is a foundation for the practical training of VTE trainees at the higher level of the programme. The reviewed literature in Chapter three (Ogundele, Waziri and Idris 2014; Eze 2010; Akpan *et al.* 2003) shows that the VTE programmes are in different categories and levels which accounts for variation in the level of theoretical knowledge of recipients at the various categories and levels.

Respondents in the study indicated that VTE higher institutions in Delta State have qualified, competent trainers who are delivering the theoretical aspect of the programme effectively. These qualified trainers by implication should be able to deliver the practical aspects of the programme should they be provided with the necessary facilities. Trainers' knowledge is essential for effective delivery of any educational programme be it general education or vocational education because their delivery will depend on their level of acquired knowledge (Seyi 2014). Yildirim *et al.* (2021:22) in their study entitled 'A Qualitative Evaluation of a Non-Thesis Graduate Program of Human Resources Development in Education', state that "...some students criticize that there is too much emphasis on education rather than business and organization dimensions since the faculty members are specialized in the field of education". The extent of knowledge impartation of trainers especially those of vocational technical education programmes is determined by the acquired knowledge and experience of the trainers (Seyi 2014). The attribution of theoretical expertise of VTE trainers by the respondents of the study provides evidence of acquired field

knowledge of trainers which includes that of the practical knowledge. The respondents of the study seem to be aware of the lack of necessary facilities for effective delivery of the practical component of the programme and silent on the level of practical expertise of the trainers that were engaged in its delivery (Serumu 2015; Yaro and Cheledi 2012). Therefore, the deficiency in the acquired skills of VTE graduates may not necessarily mean lack of practical training of the trainers, but due to lack of necessary facilities for its delivery. The respondents acknowledged that VTE institutions in the state lacked the needed tools, machines, and consumables for effective practical delivery, which support the findings of Bisalla and Adeyemi (2016). According to Ojimba (2013), brain drain of VTE trainers is one of the challenges of VTE programmes in Nigeria as some of the trainers leave the VTE institutions for the industries. Okoye and Arimonu (2016) also identified brain drain as one of the challenges of VTE programmes.

The issue of lack of tools, machines, and consumables for practical training of trainees in VTE institutions were recurring factors in most of the literature that were reviewed for the study (Okoye and Arimonu 2016; Ayonmike, Okwelle and Okeke 2015; Ojimba 2012; Nwogu and Nwanoruo 2011; Egbo 2011). The lack of needed facilities for practical delivery of VTE programmes in Nigeria may be responsible for the assertion of Dokubo (2017) that TVET teachers in Nigerian VTE institutions lack proper training. Akanbi (2017) noted that the infrastructural decay and inadequate equipment and training materials that characterised VTE institutions in Nigeria are some of the challenges affecting effective delivery of VTE programmes in the country. This could be responsible for poor programme delivery and may not be lack of proper training of trainers that was stated by Dokubo (2017).

The second aspect of the training programme is a practical aspect and is what makes the programme different from other educational programmes. It cuts across the various levels of the programmes. The delivery of the practical aspect requires expertise in manipulative skills otherwise known as practical skills. This aspect of the programme requires a practical demonstration of the theoretical aspect with tools, equipment, machines, and consumables. The findings of the study review deficiencies in the delivery of the practical component of the VTE training programmes which are discussed under constraints of the programmes below.

6.1.2.0 Constraints of VTE Programmes in Delta State

This section focused on the identified constraints by the respondents of the study. The constraints were considered for detailed discussion under training and retraining of instructors, vocational skills, planning and implementation, funds, politics and remuneration, misconception and low enrolment, and curriculum.

6.1.2.1 Training and retraining of instructors

The results from both instruments used for data collection indicated inadequate training and retraining of instructors as one of the constraints of VTE programmes in Delta State. The aspect of the training inadequacy of the instructors lies in the practical component of the training programme. The respondents reflected this through their attribution of the strengths of the programme to the theoretical aspect of the programme without the mentioning of the practical aspect. Most trainees that were interviewed described their trainers as theoretical experts, stating that their teachings were more theoretical than practical. Also, the trainees stated that their assessments were also theoretical as they were mainly examined on the theoretical components of their programmes. The emphasis on the theoretical aspect of the programme at the expense of the practical aspect, accounts for the observed rise in the proportion of inadequate training and retraining of instructors in Figure 2 (Chapter five). Training and retraining are needed for skills mastery and updates because of discoveries and inventions or modifications of machines. Efficiency and effectiveness in the delivery of VTE programmes depend on the mastery of the practical component of the programme which cannot be delivered theoretically. For example, the theoretical aspect of the functions of a machine is different from the practical operation and servicing of the machine and this made training and retraining important. In some of the practical lessons, materials are needed to produce items. Such practical lessons cannot be delivered and mastered through theorising (Güngöri, 2020; Akanbi 2017; Dokubo 2017; Oviawe 2017). Okolie *et al.* (2019) state that Higher Education Institution (HEI) which VTE is part of, do not teach high-level generic skills because of poor learning environment, lack of staff with industry experience and overdependence on 'theoretical content' teaching. It is, therefore, important for these kinds of lessons to be delivered practically which could only be possible through practical training (Nwosu and Micah 2017; Ayonmike, Okwelle and Okeke 2015). Okolie *et al.* (2019) state that HEIs in Nigeria should offer teachers with adequate training that would enable them to teach their trainees the skills required to be gainfully employed.

Adequate training is the minimum required training to equip a trainee with specific skills to practise in each vocation. Therefore, any training received which falls short of the minimum requirement is inadequate. The identification of inadequate training and retraining of VTE instructors by the employers who employ the graduates of the programme should be a source of concern. The employers that were interviewed expressed dissatisfaction with the performance of graduates of VTE programmes in their employment. The inability of those graduates that were employed in the industry to perform well in practical activities could be responsible for the employers' attribution of their poor performance to be training related of which the trainers in the institutions were in charge. In addition, the trainees during the interview that was conducted and in response to the open-ended questionnaire identified the practical deficiency inherent in their training programme as part of their challenges. However, skill acquisition of trainees depends on several related factors such as interest and dedication other than that of their trainers. Besides, few of the trainers acknowledged that their training and retraining programme is inadequate.

The technicality that is involved in VTE programmes demands regular training and retraining of the operators (trainers/instructors) as the need arises. The need for training and retraining could arise whenever there is need for update of knowledge and skills, new research finding or an invention of new tools and machines which are needed in the field where trainers are engaged. Furthermore, trainers are to be sent for refresher courses to update their knowledge and skills (Dokubo 2017). However, it was observed by the respondents of the study that training and retraining of VTE trainers in Delta State are not adequate. Lack of adequate training and retraining of trainers for an update of knowledge and skills has negatively affected the effective delivery of VTE programmes in the state (Dokubo 2017). Advance in technology which has led to development of computer software in various fields of human endeavours is on increase in VTE. Modern fault-tracing machines are now available in the automobile industry which can be used to identify faults on a vehicle engine with ease. The VTE trainers in automobile departments need to be trained on how to use such equipment to be able to teach the same to their trainees.

The rigorous methods of fault-tracing of an automobile engine through listening to the sound of the engine and observation of emission of gases has become obsolete as automobile industries expect VTE graduates that specialised in automobile to possess skills on the use of the fault-tracing machine. Therefore, the lack of this skill on the part of VTE trainer would lead to the teaching of rigorous points of

fault-finding methods to their trainees which involves: gathering of information through questioning to know when and how the fault occurred; analysing the information and deciding what might have caused the problem based on past experience; investigating by attempting to find the fault from the analysis; rectifying of the identified fault(s) safely; and testing to ensure that the fault(s) has been fully rectified and that the vehicle is in good working condition (Denton 2017).

The absence of practical teaching of the use of fault-tracing machine, would place the trainees in a disadvantaged position during their job search and interview on graduation. It would be difficult for an automobile graduate who was not taught on the practical use of the fault-tracing machine to pass a practical test on the use of the machine as part of an interview for employment in an automobile industry. The practical nature of VTE programmes coupled with continuous research findings on new methods of teaching, discovery of new production techniques, effectiveness and efficiency requiring modern technology places a demand for regular training and retraining of trainers for effective service delivery. From the reviewed literature, training and retraining challenges have persisted and this has not met Prosser's Sixteen Theorems for VTE delivery which is a major gap this current research will fill. To fill this gap, this current research has provided a model (see Figure 7 in Chapter seven) with implementation strategy embedded in it, to meet the demand of theorems 10 to 14 of Prosser's Sixteen Theorems for effective delivery of VTE programmes. The issue of lack of training and retraining of VTE trainers in Nigeria were also observed by Odo *et al.* (2017); Serumu (2015). The authors state that the training and retraining of VTE trainers in the country is poor. The results of the open-ended questionnaire are the same as those of the interview results, as most of the respondents that were interviewed stressed the need for training and retraining of trainers as presented in the previous chapter. The example of the fault diagnosis machine above shows what would be the outcome of absence of training and retraining instructors. The lack of training and retraining of VTE trainers has the implication of graduating students without preparing them for employment in the labour market. This is against Gilchrist (2020:34) who states that "The job of the educational system is to prepare students for jobs of the future and a world they will see in 10 – 20 years...". Gilchrist (2020) further states that career and technical education should provide students with concrete skills needed to be successful in their career.

6.1.2.2 Vocational skills

Vocational skills are acquired through practical training using the right tools and materials. The data collected with the two instruments (interview and questionnaire) show that trainers lack the needed skills to teach the practical aspects of the programmes because of lack facilities in VTE higher institutions that leads to practical deficiency in their training programme. However, both trainers and trainees pinpointed lack of tools, machines and consumables that are needed to carry out practical activities. The unavailability of the needed materials for practical training could be responsible for the practical deficiencies of the trainers, especially for those trainers that were trained in VTE higher institutions in Nigeria. The lack of practical training needed for the acquisition of vocational skills due to lack of tools and equipment which are part of the required resources is the cause of the observed rise in the proportion of inadequate resources shown in the previous chapter (see Figure 2 in Chapter five). Reviewed literature has shown that the VTE institutions for decades lack training facilities such as tools, machines and materials needed for practical activities (Zite and Deebom 2017; Okoye and Arimonu 2016; Ayonmike, Okwelle and Okeke 2015; Ojimba 2012; Yaro and Cheledi 2012; Nwogu and Nwanoruo 2011; Egbo 2011; Puyete 2008). The assertion of Dokubo (2017) that VTE teachers (trainers) are not properly trained could have emanated from the ill-equipped workshops of the VTE institutions where the trainers were trained. It is, therefore, difficult for the VTE institutions in Delta State to graduate trainees that will meet the needs of the industries. Avis 2012 in Kopsen (2019:2) states that for VTE to meet "...the needs of employers in its immediate environment it will reflect the classed structure of such regionally and locally". The triangulation of the findings from the interview, questionnaire and literature reviewed show that VTE higher institutions lack the needed resources such as materials and financial which has led to lack of facilities and consequently the graduation of trainees without employability skills. The evidence of lack of needed resources could be seen from the presentation of results of the study in the previous chapter (Chapter five) and from literature review in Chapter three.

The challenges of inadequate human, material, and financial resources facing VTE institutions could have prompted Wodi and Dukubor (2012) to state that the technological future of Nigeria is unpredictable. Wodi and Dukubor (2012) further stated that the vocational-technical institutions in the country continue to graduate VTE trainees who are not well equipped for job competitiveness in the labour market. These graduates who had no practical experience when employed into the education

sector would train and graduate another set of theoretical graduates to join them or to replace them on their exit. Furthermore, it would place the future generation at a disadvantaged position technologically. Similarly, the graduation of VTE trainees without actual practical training with the same machine and materials that are in use in the industry is against the principles and practice of vocational-technical education programmes as stipulated in Prosser's Sixteen Theorems on vocational education which was a basis for vocational philosophy. It was clearly stated in one of Prosser's Sixteen Theorems that "The effective establishment of process habits in any learner will be secured in proportion as the training is given on actual jobs and not on exercises or pseudo jobs" (Prosser and Quaigley 1949 theorem 10). Therefore, training and retraining of vocational-technical educators on the practical aspects of the programmes with required tools and equipment should be of concern to the vocational-technical education providers and stakeholders. The resources needed for the effective implementation of VTE programmes are materials and human and include tools, equipment, modern technology, electricity, workshops, and manpower. However, the problem of inadequacy of the has persisted (Mima-Eyovwunu *et al.* 2020; Akanbi 2017; Serumu 2015; Dokubo 2013; Seyi 2014; Yaro and Cheledi 2012) hence the need to consider the causes and possible strategical approach that would bring a lasting solution to the challenges becomes necessary and would be discussed later in this chapter.

The findings of the study show that some of the tools, machines and equipment used in VTE institutions are electrically powered and that there is lack of electricity in the VTE institutions. The finding implies that such equipment may remain idle for the period of power outage and the trainees would be denied the opportunity of being exposed to the use of such machines. The lack of exposure to the use of electrically powered machine would lead to lack of skills in the operation of such machines on the part of the trainees. The absence of electricity that is needed for the powering of power tools and machines for practical demonstration would prevent the trainers from using such machines to teach the trainees the actual practical. The trainers would be left with the option of teaching the trainees the theoretical aspects of the course which is the case of the VTE institutions in Delta State. The theoretical knowledge of the operations of a machine cannot be equated with the practical experience of the use of it. Ayonmike, Okwelle and Okeke (2015) state that inadequate electricity supply is one of the challenges of VTE programmes in Nigeria. Most of the machines that are used for practical training in VTE institutions are electrically powered and the issue of power generation and distribution in Nigeria is a major problem

affecting industries and individuals within the country. It is only those entrepreneurs that can procure and maintain generating plants that are able to maintain their industries in the country. The lack of constant power supply is discouraging some young entrepreneurs from daring into the establishment of small-scale business in Nigeria. However, those who are rich and can afford to purchase and maintain generating plants are able to establish and expand their businesses in the country. Therefore, what can be done to salvage the situation is to adopt the strategies for effective delivery of VTE programmes that were discussed later in this chapter (see section 5.3 improving VTE delivery).

The acquisition of vocational skills requires the engagement of competent trainers. A competent trainer is a person with theoretical and practical knowledge and skills in the vocational trade of specialisation (Nwosu and Micah 2017; Onwenonye 2015). It is much more than a certified VTE graduate that lacks either theoretical or practical knowledge of a vocational trade. It is, therefore, necessary that for anyone to be deemed qualified to be a vocational-technical education trainer, he or she must master both the theoretical and practical aspects of the vocational trade in which he or she claimed to specialise. The findings of the study show that there is a shortage of certified trainers with the needed theoretical and practical knowledge and skills for effective delivery of the programmes. The respondents of the study attributed some of the challenges of VTE programmes to the shortage of qualified manpower needed for effective delivery of the programmes. Qualified VTE trainers with industry experience are scarce in Nigeria as the VTE institutions may not be able to pay such experienced qualified personnel; and the possibilities of the few VTE specialist in the industries to accept an offer with a lower pay from VTE institution is very rare. In addition, the number of graduates from VTE higher institutions is not enough to meet the demand of them by the labour market. However, the few graduates of the programme lack employability skills, which has propounded the problem of increase in shortage of qualified trainers needed for effective delivery of VTE programmes in Nigeria. According to Okolie *et al.* (2020), there is a dissonance between the skills required by the labour market and what the higher education institutions offer to their students in Nigeria higher institutions which VTE is part of.

In response to the question on the most important factors impacting the quality of VTE, manpower attracted the highest frequency (see Table 8 in the previous chapter). The finding implies that the quality of VTE programmes will be affected positively or negatively by the number and quality of staff that are employed for its delivery. From the literature that was reviewed, it appears that some of the trainers that

are engaged in the delivery of VTE programmes are deficient in the practical aspects of the trade which they were engaged to teach. For example, Oviawe 2017 states that VTE trainers in Nigeria are deficient in practical skills. According to Dokubo (2017), VTE trainers are not well trained. The poor state of the machines, tools and equipment in the Nigerian higher vocational-technical institutions remain a hinderance to effective delivery of VTE programmes (Akanbi 2017; Jecrapattanatorn 2013).

Most researchers in the field attributed the lack of practical skills of VTE trainees to inadequate facilities (Odo *et al.*2017; Bisalla and Adeyemi 2016; Okoye and Arimonu 2016; Serumu, 2015; Ayonmike, Okwelle and Okeke 2015; Yaro and Cheledi 2012; Nwogu and Nwanoruo 2011) without reference to how the available resources are been utilized by the trainers. The lack of practical skills has narrowed the trainees' chances of gaining employment in the industries in their areas of specialisations. For example, most of the employers that were interviewed stated that VTE graduates are not the type that they need because they lack practical skills needed for their service delivery. However, they stated that the ones they manage to employ must be retrained practically on the use of the machines and equipment before deploying them to work. Theorem 7 of Prosser's Sixteen Theorems on vocational education states that "Vocational education will be effective in proportional as the instructor has had successful experience in the application of skills and knowledge to the operations and processes, he undertakes to teach". Comparing the triangulated findings with Prosser's sixteen theorems and reviewed literature, the level of effectiveness of vocational-technical education programmes in Delta State could be said to be low. The low level of effectiveness is because of the challenges affecting its full implementation (see Figure 3 in Chapter five).

The respondents of the study also stated that there is a mismatch between the acquired skills of VTE graduates and that which are needed in the world of work. The results of the interview were the same as those of the questionnaire in terms of acquired skills of the graduates of the programme. The mismatch is because of lack of consumables for practical demonstration during practical lesson delivery and the modern equipment, tools and machines needed to prepare the trainees for the world of work. The variation in facilities and manpower between the industries and VTE institutions account for the difference in the training and acquired skills of the graduates of the programmes and that which are needed in the industries where they are likely to be employed. The graduates of the VTE programmes are to meet the technological needs of the society through their service delivery in their areas of

specialisations as a panel beater, mason/builder, electrician, automobile mechanic, among others. The implication of the finding is a case of a skill gap. The disparity in the needed skills by the industries and that possessed by the graduates emanates from the use of obsolete machines and equipment during their training in their institutions. Available literature has indicated that some of the machines/equipment in VTE institutions are obsolete and inadequate (Akanbi 2017; Nwosu and Micah 2017; Okoye and Arimonu 2016; Ayonmike, Okwelle and Okeke 2015; Serumu 2015; Yaro and Cheledi 2012; Ojimba 2012; Nwogu and Nwanoruo 2011).

The unanimous identification of the facilities in VTE institutions to be inadequate by respondents of the study show that it is affecting the effective delivery of the programmes. The findings imply that the deficiencies in the practical training of trainees may continue if the situation should persist. The use of inadequate facilities for the training of trainees would affect their performance on graduation.

Some of the machines, tools and equipment in use are obsolete as stated by the respondents of the study. The findings agree with those of Yaro and Cheledi (2012); Akanbi (2017); Zite and Deebom (2017) which state that non-availability of adequate human resources, poorly equipped laboratories among others are the challenges affecting effective implementation of VTE programmes in Nigeria. The findings of the study have also shown that where the human resources are available, there are no material resources such as consumables to facilitate the teaching and learning process in VTE higher institutions. Nigerian VTE institutions (Delta State inclusive) are faced with a lack of needed resources for effective programme delivery (Akanbi 2017; Zite and Deebom 2017; Ayonmike, Okwelle and Okeke 2015).

Furthermore, they stated that they are been examined theoretically which indicates poor programme implementation regarding the practical components of the programme. Besides, the literature reviewed shows that VTE institutions in Nigeria lack the needed resources for the effective delivery of the programme. Similarly, reviewed literature shows that the VTE institutions are not well equipped to deliver the practical component of the programme (Dokubo 2017; Serumu 2015; Yaro and Cheledi 2012; Nwogu and Nwanoruo 2011). The implication of this is that the trainees would be trained theoretically as there are no consumables to carry out practical lessons. The results of the study have shown this as the case of VTE graduates in Delta State.

6.1.2.3 Planning and Implementation

The results of the study show that the good planning and implementation that are vital for the achievement of the goals of VTE programmes are lacking. Lack of effective planning and poor implementation of VTE programmes were identified by the respondents of the study as inhibiting factors to the delivery of the programmes in the State. The findings of the study show that the government takes sole responsibility for the planning and implementation of VTE programmes without the full involvement of the stakeholders of the programme. The non-involvement of stakeholders in a programme that concerns them is a challenge as their interests are not well represented in the planning and implementation of the programme. Serumu (2015) described the planning and implementation of VTE programmes as poor. Dike, (2013) states that poor programme implementation would lead to failure of VTE programmes. The findings imply that VTE programmes in Delta State Nigeria may not achieve its goals and objectives fully as stipulated in the National Policy on Education (NPE) with poor programmes' planning and implementation. The findings of the study agree with previous researchers who had also identified poor planning and implementation to be responsible for failure in the achievement of the objectives of VTE programmes (Mima-Eyovwunu *et al.* 2020; Dike 2013; Eze, Ezenwafor and Obi 2015). However, the authors did not mention the causes of poor planning and implementation of VTE programmes and the strategies for curbing it. The respondents to this current study perceived the use of poorly trained personnel to be one of the major causes of poor planning and implementation of VTE programmes in Delta State (see Figure 3 Chapter five).

6.1.2.4 Funds

Vocational technical education programmes are capital intensive as much money is needed for the building of standard workshops/laboratories and procurement of needed tools, equipment and machines for practical purposes, recruitment, and maintenance of qualified personnel. The triangulation of results from data collected with the open-ended questionnaire and semi-structured interview instruments convergently pinpointed lack of funds as one of the factors affecting the effective implementation of vocational-technical education programmes in higher institutions in Delta State, Nigeria (see Figures 2 and 5 in Chapter five). The government is solely responsible for the financing of the programmes through its yearly budget allocation. Therefore, the institutions depend on the government allocation which in most cases are insufficient because of budgetary and subvention deficit (Nwosu and Micah 2017). The

insufficient funds allotted to VTE institutions accounts for the institutions inability to provide for the required materials for practical activities. It is also responsible for the use of obsolete tools and machines that was mentioned by most of the respondents of the study during the interview. Funding, therefore, is a major factor impacting VTE programmes. The challenges which lack of funds pose in the delivery of VTE programmes is enormous because it would lead to a lack of facilities for the delivery of the programmes. The findings of the study also reveal that the available funds in most cases are being mismanaged.

Limited funding coupled with mismanagement as identified by the respondents of the study has adversely affected the programmes' delivery and the trainees. It has led to a shortage of funds for the purchase of consumable materials for the practical training and practice of trainees; purchase of modern tools, machines, equipment; and maintenance of available tools, machines, and equipment. Inadequate funding coupled with other identified factors in the previous chapter has led to the graduating of ill-equipped graduates that lack the required practical skills to function in their areas of specialisations. Similarly, it limits the graduates' chances of being employed in the industries and increases unemployment in the country (Okoye and Arimonu 2016). Also, the graduates' performance will be affected as the facilities required for their training would be absent. The lack of skills in the graduates of VTE programmes in the country, would lead to the engagement of technicians and craftsmen from neighbouring countries as stated by Okoye and Arimonu (2016).

The capital-intensive nature of VTE was identified by the respondents of the study as one of the causes of inadequate training and retraining of VTE instructors which in turn affects the performance of the graduates of the programmes. Training and retraining of instructors require funds which are lacking because of budgetary and subvention deficit (Nwosu and Micah 2017). The respondents emphasized that the cost of procurement of some of the equipment and machines such as lathe and milling machines are very high, while the budgeted funds are low. Lack of adequate funds as identified by some researchers (Zite and Deebom 2017; Dokubo 2017; Ayonmike, Okwelle and Okeke 2015; Bisalla and Adeyemi 2016) is the major challenge of VTE in Nigeria. Nwosu and Micah (2017) state that budgetary and subvention deficit is part of the challenges affecting the effective implementation of VTE programmes in Nigeria which applies to Delta State.

Furthermore, the respondents of the study attributed the major cause of the challenges affecting the effective implementation of VTE programmes to underfunding and mismanagement of limited funds. Indeed, the findings reveal that although the funds provided are not enough, the respondents' perception was that the limited funds available are mismanaged by those in the position of authority through embezzlement. According to Okoye and Arimonu (2016), embezzlement of funds meant for development of VTE programmes is one of the factors affecting effective delivery of the programmes, which in turn affects the performance of the graduates. The embezzlement of funds is part of the corruption that was identified by Mima-Eyovwunu *et al.* (2020) as one of the challenges of VTE programmes in Delta State. Above all, they perceived a lack of funds for the effective administration of VTE programmes to be an important factor affecting the effective delivery of the programmes which affects the performance of the graduates. Akanbi (2017) states that poor management of funds is one of the challenges of VTE programmes in Nigeria which applies to Delta State.

6.1.2.5 Politics and Remuneration

From the study, the respondents identified political instability among the factors affecting the effective implementation of VTE programmes in Delta State (see Figure 2 in Chapter five). VTE institutions in all the states in Nigeria are under the full control of the government. The key government officials that determine the fate of the programmes are political officeholders. The office of the minister for education at the federal level and commissioner for education at the state level are all political positions. Important decisions on educational programmes are taken by the minister and commissioner and their stability to a large extent determine the implementation of their decisions. In Nigeria, the positions are not stable because they can be changed for political reasons and their successors may have different ideas on how to manage the sector. This would lead to a change in policy guidelines and administration in the sector. The Nigerian education system, for example, kept changing due to political instability. These changes were mentioned in Chapter one as 6-5-4; 6-3-3-4; and 9-3-4 (Ogundele, Waziri and Idris 2014; Wodi and Dokubo 2012). During the 6-5-4 system, the students spend six years in the primary school where they are taught several subjects such as: English Language, Mathematics, Social Studies and Craft. At the primary level, the pupils (students) are introduced to vocational education under the subject called Craft. The pupils are taught how to produce some items such as brooms, baskets, ropes with locally sourced materials such as raffia palms leaves as mentioned earlier in the study. At the end of the

programme, they will write an exam and those that passed would receive the award of the Primary School Leaving Certificate. At the end of the primary school, those who wish to continue schooling will write an entrance examination to enter secondary school where they will take general subjects such as English Language, Mathematics, Social Studies, Integrated Science, and Introductory Technology in their first three years. They are made to choose either pure science subjects such as Chemistry, Physics, Biology, Agricultural Science and other three elective subjects including English and Mathematics which is compulsory for everyone in secondary school to make up the nine maximum subjects allowed at that level. The second option is for those who are in the pure arts group which offers pure arts subjects such as History, Religious Studies, Socio Studies, English Literature, English Language, Maths and any other three elective subjects to make up the maximum nine subjects. The third group are called the socio science group who are made also to choose their subject combination. Those in the socio science group choose a combination of subjects from the pure science group and the pure arts group in addition to the two compulsory subjects (English and Maths). In most cases, their common subjects are Economics, Commerce, Geography, and Religious Knowledge. At the end of the secondary school, the students are made to sit for West African Examination (WAEC) or General Certificate Examination (GCE). Successful candidates are awarded 'O' Level Certificate. The four years in this system is for those who wish to further their educational career in the University where they will spend four years minimum.

The 6-3-3-4 system is like the first system explained above. The difference between the two is the additional one year at the secondary school level and the splitting of the level into two called the junior secondary and the senior secondary. At the junior secondary, the students spend three years and are made to choose a vocational subject as an elective such as Introductory Technology which has been changed to Basic Technology or Business Studies. At the end of the first three years, they sit for an examination which is called Junior School Certificate Examination (JSCE). Those that passed the examination will be awarded the Junior School Certificate (JSC). The last four years is the same as that of the first system.

The last revision which is 9-3-4 is the same as that of the second system above. The only difference is the combination of the first 3 years of the secondary school to the six years primary making it nine years. The reason for the merging is to meet up with the compulsory nine years education for every Nigerian child. The implication is that primary school and the first three years secondary school is compulsory for

every Nigerian child. The last three years secondary education is the same with the second system above and the last four years university education is the same with those of the first and second systems above.

In addition, the national education policy has witnessed a change which was tagged revision in 1977, 1981, and 2004 (Ogundele, Waziri and Idris 2014). All the changes are in a policy document called National Policy on Education (NPE) (Federal Republic of Nigeria 2004). The change in the political system is affecting the education system in Nigeria especially that of VTE (Dokubo 2017). Most of the political elites in Nigeria do not know much about VTE and do not attach much importance to it (Nwosu and Micah 2017). For example, Bisalla and Adeyemi (2016) state that vocational-technical education programmes in Nigeria are suffering from a lack of interest in political office holders/lawmakers. The lack of interest has led to insensitivity to the needs of vocational educators and poor remuneration of the personnel as stated by the respondents of the study.

The respondents of the study also identified poor remuneration as part of the challenges of VTE in Delta State. Poor remuneration of personnel would lead to brain drain and increase the shortage of qualified trainers (Okoye and Arimonu 2016). The implication would be the leaving of the programme in the hands of those that are yet to secure a better-paid job in other sectors of the economy, who may not be committed and dedicated to duty. In Nigeria, commitment, and dedication to duty in the workplace is positively correlated to the amount of money that the worker is paid for the job (Amaeshi 2019). It is a major reason why the rate of brain drain in the oil industry in the country is very low and the level of commitment and dedication to duty very high. Amaeshi (2019:3) states that in Nigeria, "...reward is essential and an unbreakable motivator to realize organizational performance." Therefore, wages act as a motivating factor (Okoye and Arimonu 2016) for commitment and dedication to duty to some workers. On the contrary, there are some workers whose commitment and attitude to work has nothing to do with what they are receiving as salary. That is the reason there are volunteer workers who do not receive payment for the work they are doing, and they are committed to it. However, volunteer workers are very few in Nigeria. Wages in Nigeria are a motivating factor to job commitment and dedication (Amaeshi 2019). According to Jecrapattanorn (2013), teachers' motivation is one of the things that would determine the success of vocational-technical education programmes in Nigeria.

One of the ways of motivating teachers is through good remuneration. Teachers wages in Nigeria are not meeting their needs; hence they are forced to seek an alternative source of income to augment their salary (Nwogu and Nwanoruo 2011). Nwogu and Nwanoruo (2011) state that poor remuneration of vocational and technical teachers is one of the challenges of vocational-technical education programmes in Nigeria. However, previous researchers in the field seem not to have found a solution to the challenges which is tied to finance. The government of Delta State at the time this research was conducted, stands to be the sole provider of finance to VTE programmes in the state. Therefore, the state of the programmes is the product of the leadership of the state government and its financial stands.

Leadership was identified by the respondents as part of the challenges of VTE programmes in the state (see Figure 3 in Chapter five. The findings show that leadership has a great impact on the delivery of VTE programmes. Its success or failure to a large extent would depend on the quality of its leadership which in turn depends on the politicians that appoint the leaders/administrators of the programmes. The quality of leadership is displayed in their planning and implementation strategies. From the findings of the study and literature reviewed, leadership has been identified as one of the challenges of the programmes in Nigeria which applies to Delta State (Okoye and Arimonu 2016; Serumu 2015; Ayonmike, Okwelle and Okeke 2015; Nwogu and Nwanoruo 2011). Good governance and quality education are needed for sustainability of any nation (Aina 2020).

The respondents of the study stated that the politicizing of the education industry is what has led to the appointment of educational administrators that do not have the prerequisite qualification as an administrator. They went further to state that some of the heads of VTE institutions are not experts in the field of vocational education. However, a trained administrator who is an expert in the field does not need to be a specialist in the field of VTE to administer the programmes (Ganon-Shilon, Tamir and Schechter 2020). Therefore, the issue may not be that of being an expert in the field of vocational education but that of been a trained administrator. A trained administrator can administer any programme in any field without necessarily being an expert in that field. It is, therefore, not necessary to be an expert in the field of VTE to effectively administer the programmes. However, some understanding of the field would be useful because of experience (Mima-Eyovwunu *et al.* 2020). Furthermore, expertise in the field of educational administration should be the requirement for the appointment of the administrators of the programmes (Serumu 2015). If the due process were followed in the appointment of the administrators

of the programmes, it then implies that the weakness in leadership of the institutions could be responsible for some of the challenges of the programmes which is having an impact on the performance of the graduates. The inhibiting factor from the perception of the respondents is the lack of qualified administrators needed for effective delivery of VTE programmes.

6.1.2.6 Misconception and Low enrolment

The results of the study show public misconception about VTE programmes and the subsequent low enrolment of VTE trainees as major challenges of the programmes in Delta State (see Figure 2 in Chapter five). VTE programmes are perceived by most members of the public as that meant for the less intelligent individuals and for those who are unable to pursue pure academic programmes (Idris and Mbudai 2017; Nwosu and Micah 2017; Serumu 2015; Yaro and Cheledi 2012). The research findings show that the conception of society about VTE programmes has not changed despite the role it has to play towards meeting the needs of society. The role of VTE in a society is to train competent graduates that would meet the technological needs of the society (Gilchrist 2020). It is a tool to boost the economy of any nation that will harness the potential of the programmes. VTE programmes have the potential of empowering individuals and transforming them from the position of employees to that of employers. This can be achieved through public reorientation of the programmes which could lead to a change in perception from negative to positive. A change in the negative perception of the public towards VTE would lead to repositioning of the programmes by giving it the attention it deserves to yield the needed result of meeting the needs of the labour market. However, the negative perception of society towards VTE programmes in Nigeria remains unabated and a major challenge affecting its implementation (Dokubo and Dokubo 2013). Dokubo (2017) states that technical-vocational education and training (TVET) in Nigeria is held in low regard.

According to Katsande (2016), the misconception of VTE programmes is a common phenomenon in most African and European countries. The findings of the study indicated that the negative attitude of the public towards VTE programmes caused by the low level of awareness of the importance of the programmes to individuals and society at large. From the findings of the study and existing literature, the attitude of the society towards VTE programmes had been negative. It is a programme with great potential and the least esteemed in society (Olaitari 2015). Mima-Eyovwunu *et al.* (2020) described the perception of the public towards VTE programmes as poor. The societal negative perception of the

programmes (Dokubo and Dokubo 2013) account for the low enrolment of trainees in the state. Future low enrolment would lead to a future increase in the shortage of VTE graduates to feed the industries and to replace retiring trainers for programmes continuity. The findings of the study are in support of those of Akanbi (2017) who states that low societal estimation of VTE is hindering the prospect of the programmes. Olaitari (2015) also states that the wrong perception of the programmes as education for the academic 'drop-out' is one of the challenges facing VTE programmes. The wrong perception of VTE programmes should be why Zite and Deebom (2017) state that rejected students from other disciplines are always admitted into VTE programmes. The negative perception of VTE is dated back to the colonial era when western education was introduced into the country that prepares people for white-collar jobs with the government of the day (Nwosu and Micah 2017; Dokubo 2017; Ogundele, Waziri, and Idris 2014; Wodi and Dokubo 2012). The jobs that were given to those that acquired skills through vocational education were called blue-collar jobs with low prestige and income. This long-held perception remains unabated in Nigeria. This made Nwosu and Micah (2017) advocate for the launching of a campaign against negative public perception of VTE programmes in Nigeria.

The lack of orientation and awareness of VTE programmes is responsible for the persistent negative attitudes towards the programmes as identified by one of the respondents that was interviewed. It is also responsible for the low societal value of the programme (Akanbi 2017) and neglect of the programmes (Olaitari 2015). In addition, Dokubo (2017) states that VTE is held in low regard. Oviawe (2017) in support of other researchers mentioned above also described the attitude of society towards the programmes as poor. Respondents of the study additionally attached the low maintenance culture of VTE facilities to lack of orientation and awareness. Similarly, the poor maintenance culture could be responsible for the "infrastructural decay" that was observed by Akanbi (2017:7).

6.1.2.7 Curriculum

Inadequate curriculum was identified as one of the challenges of VTE programmes in higher institutions in Delta State by the respondents of the study (see figure 2 in chapter five). The deficiency of VTE curriculum according to the respondents was in the aspect of practical skills training of the trainees. The findings of the study are in support of some of the literature reviewed for the study which identified curriculum as part of the challenges of VTE programmes. For example, Dokubo (2017) states that the curriculum of VTE programme does not reflect the need of the industry. In addition, Akanbi (2017:7)

states that one of the problems of VTE programmes is “...use of outdated curriculum which result in a mismatch between what is taught and the needs of the labour market”. Furthermore, Mima-Eyovwunu *et al.* (2020); Okoye and Arimonu (2016); Bisalla and Adeyemi (2016); Serumu (2015); and Yaro and Cheledi (2012) have variously identified VTE curriculum to be obsolete and inadequate. On the contrary, Idris and Mbudai (2017:1) state that “the curriculum of VTE is adequate in terms of content and also covers the skill element needed but it is lacking in terms of implementation towards achieving the desired national goals”. In the same way, Ayonmike, Okwelle and Okeke (2015); and Seyi (2014) exonerated the challenge of VTE from curriculum inadequacy and attributed it to poor implementation. From the reviewed literature and data gathered and analysed for the study, curriculum is an important factor affecting VTE programmes either in area of implementation or inadequacy.

The findings of the study from the various sources of data gathering, showed that there is a lack of practical demonstration of the theoretical concepts of VTE programmes which posed as a challenge to the graduates. It makes the graduates lack the practical skills needed to function in their various areas of specialisations. This challenge has placed a burden on the industries that would employ the graduates to retrain them on the practical component of their trade/field which they were supposed to have mastered in their various VTE institutions. It has also made it difficult for the graduates to establish in their areas of specialisations to render direct services to members of the public as mechanics, builders, and electricians (Mima-Eyovwunu *et al.*2020; Okoye and Arimonu 2016). However, the respondents of the study attributed the cause of inadequate VTE curriculum to poor planning (see Figure 3 in Chapter five). Good implementation strategy on a faulty programme would not transform the programme because the implementation is carried out based on what was planned. Curriculum planning is, therefore, as important as its implementation and vital for the success of VTE programmes.

6.2.0 VTE Institutions and Industries

The results of the study show that vocational technical institutions in Delta State operate independently with little or no support from the industries which is one of the factors affecting the performance of graduates of VTE programmes in the State. The perception of the respondents on the synergy between VTE institutions and industries varies as they hold divergent views. For example, some of the respondents’ state that there is no synergy, but on the contrary, some state that there is enough synergy. Similarly, some state that the synergy is poor and needed to be improved upon. Their views are the

product of their perception, the angle they are viewing from and their level of understanding. Critically, viewing from the angle of those industries that do not accept VTE trainees, depicts a lack of synergy. As for those industries that accept trainees on industrial attachments, there is synergy. However, the rejection of VTE trainees by some industries from doing their industrial attachment in their industries shows that the synergy is weak and needed to be strengthened with legislation. The perception of most of the respondents of the study especially trainers and trainees show that the level of synergy between the VTE institutions and the industries in the state are far below expectation considering the industrial attachment aspect of the programme. Most of the respondents of the study saw the poor synergy as a factor affecting the performance of the graduates of VTE programmes in the higher institutions in the state.

6.2.1 Disparity between VTE Institution Facilities and Industries

In the previous chapter, the respondents identified facilities/modern technology as one of the most important factors impacting the quality of VTE programmes (see Figure 5 in Chapter five). The findings of the study show that there is a disparity in the available facilities in VTE institutions that are being used in the training of their trainees and that which are found in the industries. The training of VTE trainees with substandard and obsolete facilities as stated by most of the respondents is affecting the performance of the graduates of the programmes negatively in the aspect of practical training. One of the trainers emphatically stated that 'Presently there is a sharp difference between what we have in the schools and the industries because the facilities and machines used in schools are inadequate when compared to the ones in the industries.' In Prosser's Sixteen Theorems, it was stated that the success of any VTE training programmes hinges on the training of trainees with the same facilities that are being used in the industries where they would be employed as employees. The facilities' disparity in VTE institutions and that of the industries do not align with Prosser's theory because what is used in the training of the trainees is different from what they find in industry.

6.2.2 Role of Industries in VTE Institutions/Programmes

The industries have a role to play in the training programmes of VTE trainees. One of the roles the industries must play is to support in the practical training of VTE trainees which is entrenched in their training programme is an industrial attachment. The industrial attachment of VTE trainees is part of their training programme. This aspect of their training programme is faced with a challenge of rejection from

some of the industries in the state as stated by the respondents of the study. The rejection has narrowed the number of industries available for trainees to do their industrial attachment. Most of the respondents of the study are of the view that the roles of the industries in VTE institutions should not be limited to the practical training of trainees, but should include in-service training of trainers, donation of equipment and machines, and partnership with the VTE institutions to meet the training needs of trainees. The feasibility of this finding is an issue to be considered as the study had revealed that some of the industries do not accept trainees on industrial attachment. However, the involvement of the industries in VTE training programmes could be achieved through mutual understanding and agreement between the institutions, industries in the state and the government. The government may come up with an enabling legislation that will pave the way for the agreement between the VTE institutions and the industries. One of the respondents of the study advocated that a law should be made that will make it mandatory for all the industries that are operating in the state to partner with VTE institutions in the state. The enactment of a law on the participation of industries in VTE programmes would be possible if the bill is passed through a member of the state house of assembly and when the bill scales through the house to the executive governor and it is approved, it will be signed into law by the governor. The process is quite rigorous as the bill would have to be sponsored by a member of the state house of assembly to be presented on the floor of the house for first, second and third reading. During these readings, the proposed bill will be scrutinised for exclusion or inclusion of things considered necessary to be excluded or included. As for making of this law, the industries and members of the public will be invited by the house of assembly for public hearing as the bill concerns them. This is usually done after the first reading of the bill at the floor of the house and the public hearing will be at the second reading. The third reading will be done by the members of the house of assembly and at this point, they will harmonise the contributions of everyone and pass it into a vote. It is the outcome of the vote that will determine if the bill will be signed into law or not and the condition is that it must be supported by not less than 2/3rd majority. If the bill should succeed with 2/3rd majority vote or more, it will be passed to the executive governor of the state who will sign it into law. When this is done, the problem of synergy between the industries and VTE institutions would be resolved. Alternatively, the institutions can approach the industries for assistance and agreed on the aspects and level of assistance they need in terms of the practical training of their trainees or trainers or both.

6.3 Improving VTE Delivery

The study shows that from the views of the respondents, there are several factors affecting effective implementation of VTE programmes in Delta State. Finally, this section is to enunciate the possible strategies to improve the situation. The delivery of VTE programmes in Delta State, Nigeria has been affected by several factors which have been identified from the study and reviewed literature. In the quest to resolve the challenges, the needs of society were identified as a factor impacting the quality of VTE programmes by the respondents of the study. Meeting the needs of society is one of the main goals and objectives of VTE programmes. It is, therefore, what should inform the policymakers, curriculum planners and implementers of the programmes on their roles. There is a symbiotic relationship between the needs of society and VTE programmes. The researcher sought the opinion of the respondents on the strategies needed for the improvement of the programmes to meet the needs of the industries and the society. Their responses to the two instruments used for data collection were presented and analysed in the previous chapter (Chapter five).

From the results of the study, the partnership between VTE and industry was identified by the respondents of the study as a strategy to curb the challenges of training and retraining of VTE trainers. Full involvement of the industries in training programmes would mitigate the skill gap between that which the graduates possess and that needed in the labour market. Some of the challenges of VTE programmes were attributed to poor private sector participation in the implementation of VTE programmes (Akanbi 2017; Ayonmike, Okwelle and Okeke 2015; Serumu 2015).

The industries can be used as a training and retraining ground for VTE trainers. Non-Governmental Organisations (NGOs) can support financially to the training and retraining programmes of VTE trainers as suggested by the respondents of the study. Therefore, adequate partnership with the relevant industries as advocated by the respondents of the study is required to boost the training programmes in the areas of funding and practical training and retraining of trainers. Partnership with the organised private sector would help mitigate most of the challenges and improve the quality of the programmes (Mima-Eyovwunu *et al.* 2020; Gilchrist 2020; Ayonmike, Okwelle and Okeke 2015). It would lead to the adequate preparation of both trainers and trainees for the world of work and reduce the rate of unemployment in the country (Okolie *et al.* 2019) as most of the graduates of VTE programmes would

possess the practical skills to be self-employed and create jobs for others in their areas of specialisations.

The training and retraining of trainers through a partnership with the industries/private sectors as stated by the respondents would be an effective strategy as it will equip them with needed skills for effective service delivery. Training and retraining of trainers will give them the "...deep understanding and experience of the content which they are to deliver" (Gilchrist 2020:40-41). The findings of the study show that some of the challenges of the programmes are training related. According to Aina (2020:34), "There are cries everywhere that the teachers in Nigerian schools are not competent". Competency can be achieved through training and retraining of trainers. It is, therefore, not fair to cast blame of incompetency on trainers who were denied training and retraining opportunities. A well-trained teacher with the required facilities will be "...an important variable that influences the learnedness of a nations citizenry" (Aina 2020:31). The training and retraining of VTE trainers are crucial and should be around high-level skills which will enhance the employability of their trainees in the industry (Okolie *et al.* 2019). Therefore, the adoption of the strategy would mitigate the crucial issue of practical skills' mastery of the trainers for the training of trainees. The adoption of training and retraining strategy has the implication of VTE institutions to produce skilled graduates that would meet the technological needs of the society through their effective service delivery. It would reduce the human and material resources expended by the industries for the retraining of the graduates of the programmes that they will employ thereafter.

Respondents of the study also advocated for an increase in the practical training periods of trainees. The findings of the study have shown that the time allotted for practical training of trainees is not sufficient for the acquisition and retention of needed skills to practice in their field of specialisation on graduation. Besides, time allotted for practical are used for theoretical teaching as there is a lack of needed machines and consumables for the conduct of practical training. This is one of the contributing factors for the practical skills deficiency inherent in the graduates of the programmes. The practical skill deficiency of VTE graduates is also responsible for the retraining of the graduates by their employers before they can function effectively in their areas of specialisation. Furthermore, increase in the practical training periods of trainees as a strategy, would lead to acquisition and retention of needed skills for effectiveness and efficiency in their chosen fields when the needed resources are provided and utilized.

In addition to the strategy of retraining of existing trainers, recruitment of more qualified experienced manpower and provision of adequate workshops that are equipped with needed machines, tools, ICT, and consumables were identified by the respondents of the study as a strategy to address the situation of inadequate human and material resources. Recruitment of qualified personnel as identified by the respondents of the study would avert the effects of human resources inadequacies. Qualified personnel that are needed are those with theoretical and practical knowledge in their trade areas of specialisation. Besides, retraining of trainers using the industries as a training ground would be of help in the addressing of challenges of human resources inadequacies on the interim. These identified strategies from the findings of the study when adopted would reduce the challenges posed by inadequate resources (Nwosu and Micah 2017; Ayonmike, Okwelle and Okeke 2015). However, this has the implication of more funds for the provision of all the facilities that are needed for its full implementation. As for the issue of facilities' deficiencies, the respondents of the study advocated for the provision of necessary equipment, machines, and tools for effective training of trainees through the involvement of the industries and NGOs. The refusal of industrial attachment of VTE trainees by some industries in the state as earlier stated is an indication of lack of trust of the capabilities of the VTE institutions and their trainees (Okolie *et al.* 2019; Ayonmike, Okwelle and Okeke 2015). Most of the employers that were interviewed are willing and ready to assist the VTE institutions if the enabling environment is created, and they are approached to do so. These employers have demonstrated their commitment to the improvement of the acquisition of the practical skills of trainees by allowing them to do their industrial attachment with them. There is no legislation as at the time of conducting this research on the compulsory involvement of industries in the state to partner with VTE institutions for the training of the trainees. The provision of funds through diversification of sources of funding mentioned earlier was stated by the respondents of the study as a strategy that would make funds available which would lead to increasing the VTE institutions' budget for the procurement of needed facilities such as generating plants and other tools, equipment, machines, and consumable materials. The allocation of more funds for the purchase of generating plant and other machines, tools and equipment would ameliorate the issue of electricity (power) needed to operate the available electrically powered tools and machines as stated by the respondents of the study.

Most of the researchers that were identified in the field (Nwogu and Nwanoruo 2011; Yaro and Cheledi 2012; Ojimba 2013; Seyi 2014; Ayonmike, Okwelle and Okeke 2015; Bisalla and Adeyemi 2016; Okoye

and Arimonu 2016; Odo *et al.* 2017) referred to in the study stopped at the identification of challenges of VTE without due consideration to the cause(s) of the challenges and the mitigating approaches to be adopted to ameliorate its effect on the programme delivery. For example, they mentioned funding as a challenge without identifying the cause of it. Those that did, failed to offer strategies for the adequate provision of funds. In addition, they did not make suggestions on how to address the challenges of the mismanagement of available funds. Therefore, there is a lack of comprehensive approach in resolving funding challenges as mentioned earlier. To address the challenges, the researcher went further to identify the possible strategies for the generation of adequate funds needed for VTE delivery. These strategies from the findings include diversification of sources of funding through full involvement of the industries in the state, wealthy individuals, Non-Governmental Organisations (NGOs) and philanthropists in the funding of VTE institutions. Equally, adequate allocation and utilization of available funds were advocated (see Figure 4 in Chapter five). Also, the involvement of stakeholders in the supervision and monitoring of the use of funds allocated for programmes implementation were mentioned. The strategy for fundraising could be achieved through appeal and legislation. The government should appeal to wealthy individuals and NGOs to financially support VTE institutions in the state in the absence of any legislation. As for the industries, there should be an enabling law that should stipulate the amount each industry operating in the state should contribute based on their operating capacity for the support of VTE institutions. The adoption of these strategies with those shown in Figure 4, has the potential of positioning the institutions on a better footing in terms of adequate funding and prudent in its management.

From the results of the study, check and balances should be used to reduce corrupt practices in the system, by involving stakeholders in the process. The check and balances become necessary as embezzlement of funds meant for educational development, bribery and corruption has been identified by Okoye and Arimonu (2016) as some of the challenges of VTE in Nigeria. Aina (2020:37), stated that “There is mismanagement of the funds allocated for the construction of classrooms by the heads and the governing council of schools in collaboration with contractors”. The position of leadership is crucial in any organisation especially that of VTE institutions which has a dual role of managing the human and material resources that are needed for the achievement of its goals and objectives. Therefore, adequate monitoring and supervision is essential for accountability by the government through the agencies in charge of education.

The strategy of an increase in the salaries of trainers to reduce brain drain was identified by the respondents. Besides, the respondents were of the view that trainers and trainees should be given some incentives that would motivate and keep them in the programme. It becomes necessary to adopt these strategies to encourage trainers and trainees to remain in the field and avoid brain drain (Bisalla and Adeyemi 2016).

The neglect of VTE programmes by society has done much harm to the programmes as many trainers are leaving the institutions for the industries and other business ventures that are more lucrative (Okoye and Arimonu 2016). Likewise, the trainees are leaving the programmes for more prestigious programmes with better societal values. According to Serumu (2015), there is gross neglect of vocational and technical education programmes in Nigeria. The findings imply that more funding will be required, and the way forward is to diversify the source of funding and increase budget allocation for VTE programmes which this study has found.

The respondents of the study identified awareness creation as a strategy for addressing the challenges of misconception and low enrolment. This strategy if adopted, has the potential of delivering VTE programmes from the negative attitudes of society towards it. Equally, it might lead to an increase in investment in the programmes because of the attitudinal change. It would boost the image of the programmes which possibly will lead to an increase in enrolment of trainees. This could be achieved using mass media such as television, radio, and newspapers.

The negative perception of society towards VTE programmes in Nigeria (Mima-Eyovwunu *et al.* 2020; Olaitari 2015; Dokubo and Dokubo 2013) has affected the interest of trainers and trainees negatively. Theorem 4 of Prosser's Sixteen Theorems mentioned the interest of trainers and trainees as part of the criteria for effective delivery of VTE programmes. The negative societal attitude which has led to poor recognition and low entry-level were identified by Oviawe (2017) as some of the challenges of VTE programmes. However, awareness creation, the involvement of stakeholders in programmes' planning and review, and motivational incentives for trainees as recommended strategies from the respondents of the study may provide a lasting solution to misconception and low enrolment of VTE trainees.

Another strategy from the findings of the study is to involve stakeholders in the planning and review of the curriculum. The involvement of representatives of main stakeholders as listed in Table 9 in the previous chapter (Chapter five) in VTE curriculum planning and review would create more awareness of

the programmes which might lead to positive change in societal perception of the programmes (Serumu 2015). Stakeholders are the direct beneficiaries of the programmes. Low enrolment of trainees and brain drain of trainers are on the increase (Bisalla and Adeyemi 2016; Okoye and Arimonu 2016; Ojimba 2013; Yaro and Cheledi 2012) and could only be checked with awareness creation and attitudinal change on VTE programmes from negative to positive.

Respondents of the study unanimously agreed that the strategy of involving stakeholders in the curriculum planning and review of VTE programmes has the potential of ameliorating the challenges of the inadequacies of the present curriculum. They are of the view that stakeholders should be fully represented in the curriculum planning and review committee. The stakeholders that should be represented according to the respondents are trainers/VTE experts, government agencies/VTE administrators, industries/employers of labour, trainees, curriculum experts and civil society (see Figure 6 in the previous chapter). The involvement of trainers and VTE experts in the curriculum planning and review occurred most from the results of the open-ended questionnaire. This shows the high level of the importance of their involvement in the curriculum planning and review as perceived by the respondents of the study. Besides, the central position of trainers as experts in the field and as those involved in the implementation of the programmes through direct contact with the trainees make them very important in the curriculum planning and review of the programmes. Their direct contact with the trainees gives them an added advantage as those that would offer useful suggestions as to what should be done to improve on the programmes and bridging the existing gap between the institutions and the labour market. The inclusion of curriculum experts in the curriculum planning review as advocated by the respondents of the study is very important. The involvement of curriculum experts is crucial as they will use their expertise to harmonise the ideals of the subject specialist and those of the laymen together into a workable document for implementation. The civil society/community representatives as part of the VTE curriculum planning and review team are equally important as part of the stakeholders of the programmes. Their technological needs are met by the graduates through their service delivery as technicians, technologist, or engineers. They can make useful suggestions on how to improve the training programmes to bridge the skill gap of what the graduates possess and that which are needed to meet their needs.

6.4 Extension of Prosser's Sixteen Theorems to support VTE Delivery in Delta State

From the field findings of the study and reviewed literature, the researcher recommends that Prosser's Sixteen Theorems be extended to support the delivery of VTE programmes. The three extensions that are recommended will bridge the existing gap between the acquired skills of VTE graduates and that required by the industries. It will also mitigate the effects of the factors affecting effective delivery of the programmes. These factors from the perspectives of the respondents of the study is also affecting the performance of the graduates of the programmes. The researcher, therefore, considered it necessary that Prosser's Sixteen Theorems be extended, as the extension would provide ways of meeting the demands of the existing sixteen theorems which were not addressed by Prosser. For example, Prosser did not address the issue of how to make the environment to be conducive or replica as the place of work and how to tackle funding issues which are major challenges of VTE programmes.

The three recommended extensions are:

1. 'VTE trainees should have their training 50% in their institutions and 50% in relevant industries in their areas of specialisations.' This will support the programme to meet the standards of Prosser's theorems 1, 2, 3, 6, 7, 9, 10, and 11.
2. 'Trained VTE guidance and counsellors should be involved in the assigning of vocational trades to trainees based on balanced choice of trainees in relation to their individual characteristics, interest, aptitudes, and intrinsic intelligence.' This extension will help to meet the demand of the existing theorems 4, 5, 8, and 14 of Prosser's Sixteen Theorems.
3. 'VTE programmes in the state should be jointly funded and supervised by the government, industries, NGOs, and wealthy individuals in the state.' This will address the administrative and funding challenges that is affecting the effective delivery of VTE programmes in the state and would meet the demands of the existing Prosser's theorems 15 and 16.

6.5 Limitations and Delimitations of the study

There is no research method without limitations (Katsande 2016). This study, therefore, experienced some elements of limitations in the following areas. The study did not cover all the higher institutions in Delta State. There are sixteen government higher institutions in the state and two were used because

of the design of the study. In addition, it did not cover all the industries in the state because not all of them accept VTE trainees on industrial attachment in their industries. Besides, the quality of the results of the study relied on the experiences of the respondents of the study which they willingly shared. The implication is that some of the respondents might have decided not to respond to some of the questions for reasons best known to them. The possibilities of this happening did limit the findings of the study.

In addition, the study did not include private higher institutions in the state which are under the full control and administration of individual proprietors because their administrative structures are different from those of the government institutions. Similarly, the study did not cover vocational-technical institutions at the technician and artisan levels.

However, the study was delimited to the use of interviews and open-ended questionnaires (mixed methods) as a matter of choice of design. The design choice was made to generate sufficient data from individual respondents to address the objectives of the study and answer the research questions. Alternatively, the researcher could have used other methods of data collection such as focus groups, observation, and closed-ended questionnaires. The approach could have been to review literature in the field of vocational-technical education programmes; carry out personal observation of the workshops and available facilities such as the equipment, machines, tools, and consumables for practical activities; draft the questions for the focus group discussion and the questionnaire instruments. The open-ended questions for the focus group discussion could have been drafted using the findings and recommendations from other researchers in the field and findings from the observation of the workshops and the available facilities in the VTE institutions as a guide. The closed-ended questionnaire could have been drafted using the results from the focus group discussion, observation of the workshops and facilities in the VTE institutions, and the findings of other researchers from the reviewed literature as a guide. The above procedures should have been followed if this alternative method was used. Similarly, the study did not cover the industries outside the state capital due to time constraints. A survey research approach was adopted in the conduct of the research as it did not cover the entire higher institutions in the state because of the choice of design of the study and time. Therefore, the sample size is one of the limitations of the study and it is in support of Kuknor and Bhattacharya (2021) who identified sample size

as one of the limitations of survey research. The results were used as representative of higher institutions offering VTE programmes in the state.

6.6 Chapter Summary

The chapter combined the findings of the study and reviewed literature for discussion. The discussion was organised under four main sections. The first section was on the strength of VTE programme which was mainly theoretical aspects of the programme. The second section was on the weaknesses of the programme which was deficiency in the delivery of the practical aspect of the programme because of inadequate human, material, and financial resources. The third section was on the strategies that could be adopted for effective delivery of the programme. The last section was on the extension of Prosser's sixteen theorems to support the effective delivery VTE programmes in Delta State. The next chapter shall be devoted to the conclusion of the study.

Chapter Seven

Conclusion

7.0 Introduction

VTE is intended to prepare its trainees (students) for work. From the perspective of stakeholders (trainees, trainers, and employers) used for the study, the findings show that the programmes are not meeting the technological needs of the industries and those of the society. The graduates of the programmes lack the necessary skills for effective service delivery. They are not fit for employment, hence those that secure employment in the industry must be retrained. The lack of job readiness of the graduates was because of challenges facing the effective delivery of the programmes which were identified. Attempts were made to consider the causes of the challenges and the strategies for curbing the challenges. The main research question and the four sub research questions that guided the study were answered with the data that were generated and analysed from the fieldwork.

The main research question for this study was:

What are the trainers', trainees' and employers' perceptions of the factors affecting the performance of graduates of vocational-technical education programmes in Delta State, Nigeria and what changes would they like to see?

The sub research questions are:

- i. What are the factors affecting effective implementation of VTE programmes?
- ii. What are the strategies that could be adopted to deliver effective VTE programmes?
- iii. What kind of framework would be utilised to deliver effective VTE programmes?
- iv. How could Prosser's Sixteen Theorems be extended to support the delivery of effective VTE programmes?

The main research question with the first sub question were on the factors affecting effective implementation of VTE programmes and the respondents' perceptions on those factors affecting the performance of the graduates. The main and first sub research questions were answered with the research findings which show that the factors affecting effective implementation of VTE programmes were inadequate human and material resources, insufficient funding, poor planning and implementation, political instability, misconception about VTE programmes, inadequate staff training and retraining, and

inadequate VTE curriculum. These factors were also perceived by the respondents to be affecting the performance of the graduates.

Inadequate human and material resources identification by the respondents of the study as one of the factors affecting effective delivery of VTE programmes shows how they perceived the available human and material resources in higher institutions in Delta State that were offering VTE programmes. They perceived that the available human and material resources were quantitatively and qualitatively inadequate (Okoye and Arimonu 2016) as discussed in the previous chapter. In addition, available funds were considered insufficient for effective delivery of the programme. The respondents also perceived that the programme planning, and implementation were poor. Political instability was perceived as one of the important factors affecting VTE delivery and that there was inconsistency of subsequent government continuity in programme implementation of their predecessors. Misconception about VTE programmes, inadequate curriculum, inadequate training and retraining of trainers were among the factors considered to be affecting the delivery of VTE programmes and the performance of the graduates.

The second sub research question was answered with the respondents' (trainers, trainees, and employers) identification of the strategies which could be adopted for effective VTE programmes delivery. The strategies were all discussed fully in the previous chapter (Chapter six). These strategies include: adequate provision and utilisation of funds; updating of trainers' knowledge and skills through training and retraining programmes; procurement of adequate facilities such as tools, machines, equipment and consumables for practical training; involvement of industries in VTE programmes through sustained synergy; provision of constant power supply; making the teaching and learning environment conducive; and involvement of VTE stakeholders in the planning and review of the curriculum of the programmes.

The respondents of the study identified the above strategies as being able to deliver effective VTE programmes should it be adopted. Some of the strategies supported the findings of previous studies, for example, Gilchrist (2020) identified professional training as an important strategy for effective delivery of VTE programme. Professional training and retraining of VTE trainers are essential for knowledge and skills update because of emergent research findings in the field of VTE which is technologically driven

(Goyol and Sunday 2020). Allen (2020:276) states that “The training of academic staff is ordinarily a continuous exercise to ensure consistent improvement in the quality of their outputs. Training to acquire minimum qualification to teach and continued professional training is important”.

From the findings of the study, literature reviewed for the study, and a theoretical framework using Prosser’s Sixteen Theorems (Prosser and Quigley 1949), sub research questions three and four were answered with a proposed VTE programme delivery model (see Figure 7 in Section 7.3); and a proposed extension of Prosser’s Sixteen Theorems to support VTE delivery in Delta State, Nigeria in the previous chapter (see Section 6.4 in Chapter six).

The researcher developed a proposed framework that would be utilised to deliver an effective VTE programme from the field work in addition to literature review to answer sub question three. The framework becomes necessary to address the three identified key resources (human, material, and financial resources) needed for effective delivery of VTE programmes. See section 7.3 in this chapter for details of the framework.

Sub question four was answered with the proposed extension of Prosser’s Sixteen Theorems for effective delivery of VTE programmes. The researcher proposed three extensions of Prosser’s Sixteen Theorems to support effective delivery of VTE in Delta State, Nigeria. The extension would bridge the gap between the present standard of VTE programmes in Delta State and those that were stated by Prosser as bases for establishment of the programmes.

This chapter considers the overview of the study, contribution to knowledge, VTE programme delivery model, recommendation, and future research.

7.1 Overview of the study

Vocational-technical education programmes are meant to meet the needs of learners/trainees, industries, and society through service delivery as skilled production workers. The findings reveal that the interest of these key stakeholders of the programmes in Delta State, Nigeria are neglected, and their needs are not being met. The findings of the study show that the factors affecting the effective implementation of VTE programmes revolve around funding, curriculum, human and material resources’ inadequacy.

Trainers, trainees, and employers of labour from the findings of the study are not satisfied with the present state of vocational-technical education programmes in Delta State, Nigeria. The programmes are faced with challenges which are affecting their effective delivery. The respondents of the study had divergent and convergent views in some aspects of the programmes which were enunciated in the discussion chapter (Chapter six). The strength of the institutions lies in their theoretical lesson delivery. However, more emphasis in the theoretical aspect of the programmes than the practical component of it was juxtaposed as a weakness by most of the respondents. The respondents had a divergent view around personnel, for instance, some state that the personnel are adequate, whereas others state that they are not. Comparing the findings with existing literature, the personnel with the required skills for effective delivery of the programmes are insufficient. However, the respondents' views converged in the aspects of funding which was stated to be inadequate. Similarly, the respondents identified human and material resources to be inadequate. Equally, most of the respondents unanimously state that the curriculum is inadequate and that the training and retraining of the trainers is poor. In the same way, they identified the relationship between VTE institutions and the industries as poor and added that there is a disparity in the equipment, machines and tools that are used in VTE institutions for the training of trainees with those that are used in the relevant industries. The disparity could be responsible for the low level of industries' satisfaction on the performance of VTE graduates as identified by the respondents. Furthermore, the respondents agreed that the industries should be involved in VTE training programmes. Above all, the respondents state that the attitude of the society towards VTE is negative and it is responsible for the poor maintenance culture of the available VTE facilities. The need for an all-inclusive approach to the challenges and the design of a model for effective delivery of the VTE programmes as the way forward emerged from the study as an addition to knowledge.

The findings of the study identified three main areas that need to be addressed for positive change in the delivery of VTE programmes to meet the needs of the trainees, industries, and that of society. The three main areas are human resources, material resources and financial resources. These resources are interconnected in such a way that a disjointed approach may not yield the desired results. However, with the newly designed VTE model, human resources complexities would be resolved with strategic training and retraining of trainers in the practical component of the programme in their various areas of

specialisation. As this is being done, necessary materials would be identified and provided ready for use by the retrained trainers to train the trainees who would feed the industries or become trainers in future for programme continuity. To purchase the required facilities, service them and keep the programme running, funding is required. This is where the need for diversification of sources of funding becomes imperative. With the strategy of funds' diversification, funds would be generated from different sources such as wealthy individuals, NGOs, and industries. When this is done, funds would be made available for the effective delivery of the programmes.

7.2 Contribution to Knowledge

The study fits into the existing literature with new findings as an addition to knowledge which are stated below:

Researchers in the field have found that funding is a major challenge that is affecting the effective delivery of VTE programmes (Mima-Eyovwunu *et al.* 2020; Zite and Deebom 2017; Dokubo 2017; Okoye and Arimonu 2016; Katsande 2016; Olaitari 2015; Emike, Basse and Ushie 2013). The current study also finds that funding is one of the challenges affecting VTE delivery in Delta State. However, the study went further to identify inadequate provision and mismanagement as contributing factors to shortage of funds within VTE institutions in the state. In addition, the study advanced strategies for curbing the challenges of funding which include diversification of sources of funding, increase in budgetary allocation for VTE institutions and adequate utilisation which could be achieved through effective monitoring and supervision by the government through the supervisory ministry.

The reviewed literature has shown that there is a skills gap between what the VTE graduates possess and that which are needed in the industries where they are likely to be employed (Mima-Eyovwunu *et al.* 2020; Oviawe 2017; Okoye and Arimonu 2016; Serumu 2015; Nwogu and Nwanoruo 2011). The findings of this study have shown that the skills gap still exists but went further to suggest ways of mitigating the gap through VTE institutions and industries' partnership. The full involvement of the industries in the practical training of trainees is missing and could be restored through partnership. This could be achieved through the strengthening of the synergy between the industries and VTE institutions in the training programmes of trainees.

The existing literature has shown that the negative attitude of the society is one of the challenges of VTE programmes (Mima-Eyovwunu *et al.* 2020; Nwosu and Micah 2017; Akanbi 2017; Oviawe 2017; Olaitari 2015). This current study has shown that the negative attitude of the society could be resolved with awareness creation on the importance of VTE programmes to the members of the society through various mass media such as television, radio, and newspapers.

Literature reviewed has shown that VTE trainers are poorly trained especially in the practical aspect of the programmes (Dokubo 2017; Yaro and Cheledi 2012). The current study supported the existing literature and added to it with suggested in-service training of trainers in the industries for practical experience.

The reviewed literature identified the curriculum of VTE programmes as inadequate (Dokubo 2017; Akanbi 2017) and did not mention the involvement of VTE trainees in the curriculum planning of their programme. This study has added to literature with its suggested involvement of trainees and other stakeholders in the planning of curriculum to address the inadequacies and bridge the existing gap.

Researchers in the field of VTE have identified lots of challenges of VTE programmes that have defied solution due to the lack of a comprehensive approach to the challenges. In contrast, this study has used a systematic approach that could alleviate the problems. From the findings of the study, reviewed literature, and Prosser's Sixteen Theorems, the researcher proposed a model for effective delivery of VTE programmes in Delta State, Nigeria. In the proposed VTE model (Figure 7), representatives from the industries/employers of labour, VTE trainees, VTE institutions, curriculum experts, members of the community would be involved in the curriculum planning and review of VTE programmes. This would address the existing gap between the present VTE programmes and the needs of the society, thereby meeting the requirements for the establishment of VTE programmes as stated in Prosser's Sixteen Theorems 1 to 10 (see section 3.1 in Chapter three). It would also address the persistent challenges facing the programmes which were identified in the reviewed literature. Implementation of the findings of the study would provide a holistic approach to the challenges of VTE programmes which was lacking in previous studies.

In the implementation of the model, the contents of the curriculum should include the theoretical and practical aspects of the various trades/vocations to equip trainees with the necessary skills to function

as a specialist in their areas of specialisation. The contents must be grouped into programmes that will prepare the trainees with the required skills for effective service delivery as employees in the industries or as self-employed in their chosen fields, or as trainers in VTE institutions. When the contents are grouped into programmes and trainees are trained in a specific programme, it would lead to effective and efficient service delivery due to the mastery of the given vocation and would meet the demands of Prosser's Sixteen Theorems 11 to 14 (see Section 3.1 in Chapter three).

The model suggests that the programmes should be jointly funded by the government, industries/employers of labour, Non-Governmental Organisations (NGOs), philanthropists and willing individuals to meet the demands of Prosser's Sixteen Theorems 15 and 16. Also, the model suggests that the programmes should be monitored and supervised by a committee made up of elected representatives of the stakeholders such as the state government/supervisory ministry, industries, VTE experts/trainers, members of the community which should report to the supervisory ministry of education in charge of VTE institutions. The monitoring and supervisory committee should write an annual report of their observations during monitoring for the period. The report should be used to evaluate the programmes and improve on the contents of the curriculum by the curriculum review committee as the need arises.

The model suggests that three further representative committees, (including industries/employers, trainers, trainees, ministry of education/government representatives and curriculum experts) should be set up for effective implementation of the model:

i. Curriculum planning and review committee: The function of this committee is to plan and review the curriculum to the needs of the industries and that of the society. They will work as a team using the guideline for the purpose of the establishment of VTE institutions and to achieve its primary goals and objectives.

ii. Programmes monitoring and supervisory committee: This committee shall be responsible for the supervision and monitoring of the implementation of the programmes making sure that there is no diversion of resources. They are also to ensure that effective teaching and learning is ongoing by paying unscheduled visit to institutions and inspect their facilities to ascertain that they are in good working condition and are being utilised for the practical training of the trainees.

iii. Funding committee: The duties of this committee are to raise funds from various sources (industries, NGOs, and philanthropists for the funding of the institutions. The money that will be raised to the ministry of education for disbursement to the various institutions.

7.3 VTE Programme Delivery Model

The findings of the study and the literature reviewed have shown that the challenges of VTE programmes in Delta State, Nigeria revolve around human, material, and financial resources. These challenges have persisted for decades and have motivated the researcher to come up with the design of a model that would capture the three aspects of the resources inadequacies and provide a lead way through which it could be resolve. Model development in most cases is “... based on findings from field study and literature review” (Gunadi *et al.* 2020:140). The proposed designed model is shown in Figure 7 below with detailed explanation underneath.

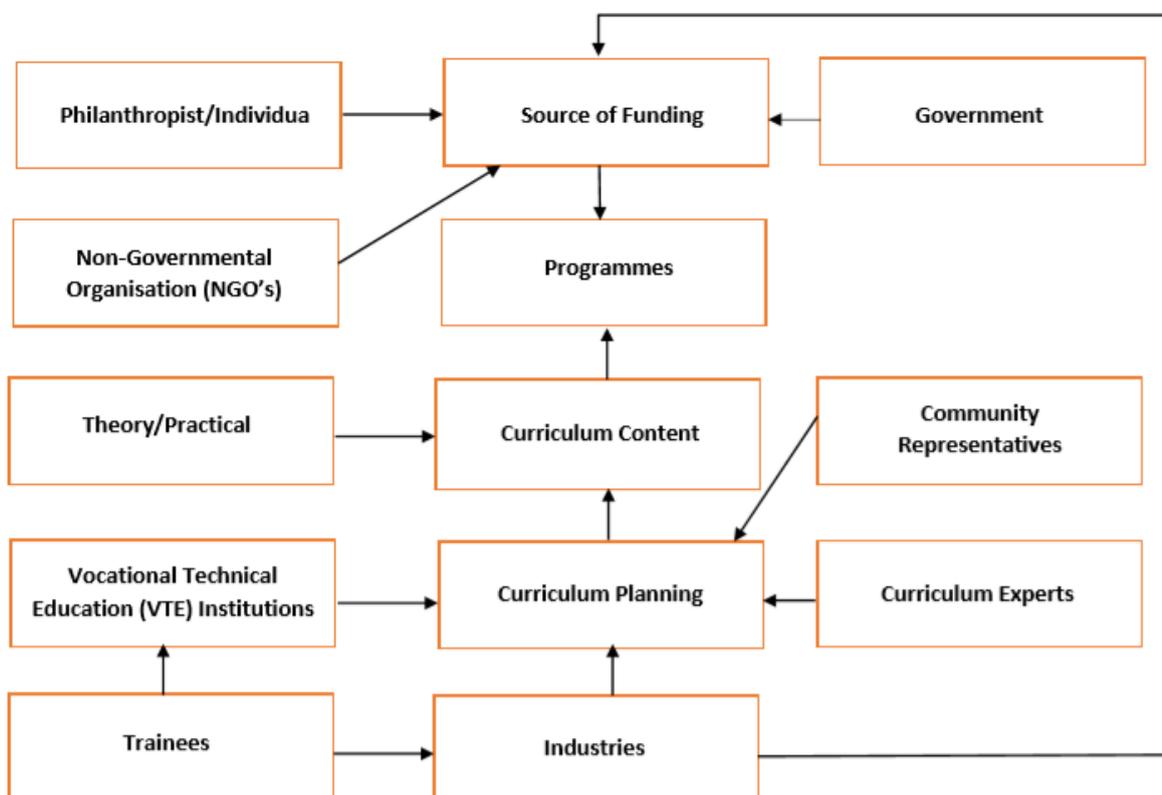


Figure 7. Proposed VTE Programme Delivery Model

From the model above, the arrows indicate the direction where action is needed for the workability of the model. For the model to work, there should be public sensitisation and awareness by government through the various media such as the television, radio, and newspapers publication. The public should be made to see the need to be involved in VTE programmes which are meant to meet their needs. The challenge of financial resources could be mitigated through diversification of sources of funding and not leaving it for government alone. There are several ways funds can be generated outside the government coffers to support the funding of VTE programmes. These sources as indicated in the figure are philanthropists/individuals, government, non-governmental organisations, and industries as indicated with arrows. Other sources of funding such as students' levy and institutional internally generated revenue (IGR) could be explored.

Human resources challenge could be resolved using a systematic approach as indicated in the model. This could be achieved through training of trainees of the programmes to acquire field-specific (technical/professional) skills and generic skills which include "...communication, critical thinking, problem-solving, teamwork, lifelong learning, professional ethics, entrepreneurship, and leadership..." (Okolie *et al.* 2019: 4). These skills should, therefore, be imbedded in the curriculum and the model has stipulated those that should be involved in its planning and review: VTE institutions which include trainers and trainees, industries, community representatives, curriculum experts, and government. Curriculum planning and review committee members should therefore be representatives of the stakeholders mentioned above for the model to work.

Material resources challenges would be solved with the necessary equipment, machines, tools, and consumables for practical sessions which will be purchased with the funds that will be made available through funds generation from diverse sources. The purchase of machines, tools, and equipment for training of trainees should be by experts in the field that know the type that is needed to avoid wastage.

In actualising the involvement of stakeholders in the planning and administration of VTE programmes, their representatives should be involved in the curriculum planning and review of the programmes. They should be involved in the various committees such as the planning, monitoring, supervision, and curriculum review committees. Industries should be encouraged to donate tools, machines, and

equipment to VTE institutions and wealthy members of the society should be encouraged also to be involved in the financing of VTE institutions.

Factors that will make the new model work

The Federal Government of Nigeria (FGN) is aware of the persisting challenges of VTE institutions and programmes. The state and the federal government of Nigeria are making efforts to find a lasting solution to the challenges facing VTE programmes by granting scholarships to VTE trainers locally and internationally for in-service training. The purpose of the in-service training is to improve service delivery which is one of the challenges of the programmes. The proposed model has the potentials of resolving funding problems which is a key challenge that other challenges hinged on. This could do so with the strategy of provision of funds through various sources which are imbedded in the model and will be used for the purchase of necessary materials, tools, equipment, and machines. In addition, there will be funds available for the training and retraining of trainers and the recruitment of more experienced qualified trainers for better service delivery which will lead to the achievement of the goals and objectives of the programmes. Therefore, there is a tendency for the government to accept the new model as the sponsors of the programme and make it a policy document for the implementation of VTE programmes. The adoption of the model would bridge the existing gap in terms of acquired skills of the graduates and those needed by the industries.

The tools, machines and equipment needed for cultivation, processing, preservation, and storage are lacking and the VTE institutions are unable to produce graduates with the necessary skills to invent the tools, machines and equipment that are needed for production. Also, as discussed in Chapter six, VTE institutions have not been able to produce graduates with the skills necessary to service or repair industrial tools and machines which some of the industries had procured from other countries. That was why the industries must retrain VTE graduates that they employ before deploying them to their various departments to work. At the event of a breakdown of the machines, the industries had no alternative than to hire technicians from other countries to fix the machines (Okoye and Arimonu 2016). Therefore, the industries spend more in the hiring of technicians outside the country than they should have spent in the hiring of VTE graduates within the country should the VTE institutions had been equipped with the necessary human and material resources for effective programmes delivery.

7.4 Recommendations

From the findings of the study that were discussed in the previous chapter (Chapter six), the following recommendations were made.

All vocational-technical education boards and institutions should be headed by qualified educational administrators with VTE experience. It takes an experienced and trained VTE to understand the depths of the challenges of the programmes and how to prioritise the meeting of the needs of the institutions for effective programmes delivery with the limited funds budgeted for the running of the institutions.

There should be legislation in place for compulsory involvement of industries' partnership with VTE institutions. By this, the industries would have an equal stake in the training programmes of the trainees as the institutions do. This will bridge the existing skills gap between what the industries need and that which VTE graduates possess. With this, the trainees will be at home in the industries as they are in their various institutions and would not be strangers or visitors to the industries during their industrial training which should transcend their industrial attachment. It is, therefore, recommended that the government should make it compulsory for every industry in the state to be involved in the training programmes of trainees of vocational-technical education and to accept them into their industries for practical training. As industrial attachment is embedded into the VTE training programmes, the legislation on the compulsory involvement of the industries becomes imperative. Also, the industries should be made to pay a specified amount of money annually for the funding of VTE institutions in the state. The amount to be paid should be worked out using certain criteria such as the size of the industry or capital investment.

Restructuring of VTE programmes is required to meet the needs of the industries and that of the society which they are meant to serve. In restructuring of VTE programmes, the vocational-technical education curriculum should be reviewed to accommodate more practical training in the industries. The industries and VTE institutions should be training grounds for VTE trainees. The trainees should have free access to the industries as they do have to their various institutions. With the enabling legislation in place, VTE trainees would have access to the relevant industries for their industrial training which is part of their programmes. When this is done, the existing gap in the training received in their various institutions and those which are needed in the industries would be bridged.

There should be regular training and retraining of VTE trainers on innovations in their areas of specialisations for an update of their knowledge and skills. The trainers should be sent to research institutes such as the Agricultural Research Institute in Ibadan, Nigeria, and the industries such as General Steel Mill (GSM), Asaba for their training and retraining programmes. The retraining of the trainers in the industries will expose them to the operations and servicing/repairs of modern equipment, tools and machines which will equip them with the skills for effective service delivery.

Trainees should be encouraged to visit the guidance and counsellors in their institutions for counselling on choice of areas of specialisation. There is need for proper guidance of trainees on the choice of trades based on their capabilities and interest. Trainees would do better in a vocational trade where they have the interest and the natural abilities to cope. Therefore, the need for proper guidance of trainees in choice of a vocational trade based on the individual's capabilities and phlegmatic inherent traits is very important.

Provision of steady electric power supply in VTE institutions should be deployed by ensuring steady electric power supply is made available in all the institutions to power electrically operated tools and machines for practical activities. Where there is no electricity, generating plant should be provided as a substitute.

Equipping of existing VTE workshops with relevant modern tools, machines, ICT facilities, and consumables for practical training of trainees should be implemented. In addition to equipping the existing workshops, more standard workshops and laboratories should be built in all VTE institutions and should be equipped with modern, relevant, and functioning machines, equipment, tools, and consumable materials for practical training of trainees.

More qualified experienced workshop attendants with practical skills should be recruited to mind the workshops and assist trainees to carry out their practical assignment.

Diversification of sources of funding of VTE institutions should be considered. Source of funding of VTE programmes should be diversified and not limited to the government alone. This will lead to the generation of adequate funds that are required for the delivery of effective VTE programmes in the state.

Public awareness on the important of VTE programmes should be created. There should be public awareness creation on the importance of VTE programmes through the various mass media such as television, radio, and newspapers.

There should be motivational incentives for VTE trainers and trainees. Trainers should be motivated with additional allowances to their salary, while trainees should be motivated with scholarship and payment of study allowance. This may reduce the rate of brain drain and decline in enrolment of trainees into the programmes.

State of emergency should be declared on VTE programmes. The declaration of a state of emergency on VTE programmes would lead to the paying of the full attention of stakeholders on how to tackle the challenges facing the effective delivery of the programmes in the state.

Formulation of a new policy on VTE programmes with an emphasis on practical skills' acquisition. There should be a new policy on VTE programmes with well-defined policy guidelines that would lead to the achievement of the goals of the programmes.

Involvement of representatives of all stakeholders in the curriculum planning and review of VTE programmes. The involvement of stakeholders on VTE programmes would improve the society values of the programmes and change their negative perception.

Regular training and retraining of VTE trainers on innovations in their areas of specialisations for an update of their knowledge and skills are recommended. The trainers should be sent to research institutes and the industries for their training and retraining programmes. The retraining of the trainers in the industries will expose them to the operations and servicing/repairs of modern equipment, tools and machines which will equip them with the needed skills for effective service delivery.

Involvement of stakeholders in the planning and administration of VTE programmes. Representatives of stakeholders such as various trade unions, organisations, religious bodies, industries, trainers, trainees, curriculum experts, communities and ministry of education should be involved in the curriculum planning and review of vocational-technical education programmes. They should be involved in the various committees such as the planning, monitoring, supervision, and curriculum review committees. Industries

should be allowed to donate tools, machines, and equipment to VTE institutions and wealthy members of the society should be sensitised on the need to be involved in the financing of VTE institutions.

A vocational technical education levy should be introduced and made compulsories for all businesses that are operating in the state. Every business establishment in the state should be made to contribute a certain amount of money for the financing of vocational-technical education institutions in the state.

One-year compulsory practical training in relevant industries should be included as part of the training programme of VTE trainees in higher institutions. The one-year practical training would help equip VTE trainees with practical skills needed for effective delivery in their various areas of specialisation as employee in the industry or as self-employed on graduation. Therefore, state government should make it compulsory for industries operating in the state to accept VTE trainees for one-year practical training in their industries as part of their training programme. This one-year compulsory practical training should be in addition to the existing industrial attachment period. The one-year introduction implies an additional one year to the trainees' years of training and should be completed before awarding certificates or degrees to the trainees as graduates of the programme.

7.5 Further Research

The researcher suggests that further research should be carried out:

Studies should be carried out on the integration of industries and VTE institutions in the training of VTE trainees for acquisition of employability skills for gainful employment on graduation.

The findings of the current study show that the challenges of VTE programmes revolve around human, material, and financial resources. The researcher, therefore, recommends studies into the best ways of sourcing for funds for VTE programmes delivery.

Concerns were raised by the trainees over their training programmes in respect of practical training. It is recommended that studies should be carried out on the training needs of VTE trainers for the preparation of trainees for the world of work.

Concerns were also raised on the curriculum of VTE programmes by the trainers, trainees, and employers. It is, therefore, recommended that studies should be carried out on the need for restructuring

VTE programmes' curriculum to reflect contents that would lead to the acquisition of generic skills and field-specific skills for job readiness of graduates on graduation.

Research should be carried out on ways of training VTE trainees to meet present and future demands of the labour market.

Current study designed a novel VTE programme delivery model to mitigate challenges affecting the programmes' delivery. It is, therefore, recommended that studies be carried out on the testing of the model's effectiveness in mitigating VTE challenges.

From the findings of the study and reviewed literature, the researcher suggested that Prosser's Sixteen Theorems be extended to support the delivery of VTE programmes. It is, therefore, recommended that the suggested extension should be tested by given it a trial.

7.6 Chapter Summary

The natural environment of Delta State and Nigeria, in general, is endowed with lots of natural resources that require knowledge and skills to explore. These natural resources which are there for those with the skills and knowledge to tap into and meet the needs of the society are large, uncultivated lands with mineral resources underneath the earth crust. However, the skills and knowledge which VTE institutions are supposed to impart into their graduates for exploits are lacking. The large, uncultivated lands that could be used for mechanised farming are lying fallow as the VTE graduates in the state lack the knowledge and skills to explore mechanised farming to meet the needs of the society in the areas of food production, processing, preservation, and storage. The unsatisfactory service delivery of VTE graduates from the findings of the study gave rise to the need of designing a model for effective delivery of VTE programmes in the state.

This chapter is the concluding chapter of the study and it considered the overview of the study. It showed how the findings supported the existing literature and extended beyond as an addition to knowledge, which led to the development of new VTE model for effective delivery of the programme. In addition, recommendations for further research and suggestions for further studies were made.

References

- Abawi, K., 2013. Data Collection Instruments (Questionnaire and Interview). Available at: <https://www.gfmer.ch/SRH-Course-2012/Geneva-Workshop/pdf/Data-collection-instruments-Abawi-2013.pdf> (Accessed 13 October 2017)
- Abdul-Aziz¹, S.N., Zulkifli, N., Nashir, I.M., and Karim, N.A.A., 2020. Pull and Push Factors of Students' Enrolment in the TVET Programme at Community Colleges in Malaysia. (pdf) Available at: < DOI: <https://doi.org/10.30880/jtet.2020.12.01.007>> (Accessed 5 July 2020)
- Abdullahi, N., 2017. Assessment of Women Participation in Science and Technical Education (A Case Study of Umar Shinkafi Polytechnic, Sokoto, Sokoto State). *Journal of Teacher Perspective*, 12 (2), pp. 1 – 11
- Adamu, A.U., 2000. Educational Reforms in Nigeria. (pdf) Available at: https://www.auadamu.com/phocadownload/Conference_Presentations/Education_Presentations/2000%20Educational%20Reforms%20in%20Nigeria.pdf (Accessed 30 July 2020)
- Adeyeye, B.A., and Mason, A., 2020. Opening Futures for Nigerian Education – Integrating Educational Technologies with Indigenous Knowledge and Practices. *Open Praxis* 12 (1), pp. 27 - 37
- Aina, J.K., 2020. Educational Reforms in Nigeria: The Kaduna State Teachers' Competency Test. *Open Journal Educational Development (OJED)* 1 (1), pp. 31 – 44
- Akanbi, G. O., and Jekayinfa, A. A. 2019. Education and emancipation, educational policies and «de-emancipation»: A history of the Nigerian education system from 1914 to 2014. (pdf) *Espacio, Tiempo y Educación*, 6(2), pp. 177-196. Available at: <http://dx.doi.org/10.14516/ete.230> (Accessed 10 August 2020)
- Akanbi, G.O., 2017. Prospects for Technical and Vocational Education and Training (TVET) in Nigeria: Bridging the Gap between Policy Document and Implementation. *The International Education Journal: Comparative Perspectives* 16 (2), pp. 1–15
- Akhuemonkhan, I. A., and Raimi, L., 2013. Impact of Quality Assurance on Technical Vocational Education and Training (TVET) in Nigeria. Paper presented at the Centre for Entrepreneurship Development, Yaba College of Technology, Lagos, Nigeria.
- Akpan, G.A., Usoro, H.S., and Ibiritan, K.S., 2003. The Evolution of Vocational Education in Nigeria and Its Role in National Development. Available at: <globalacademicgroup.com/.../The%20Evolution%20of%20Vocational%20Education...> (Accessed 9 June 2017)
- Akpotohwo, C.F., and Ehimen, T.E., 2014. Gender Disparity in Acquisition of Technical-Vocational Skills in Delta and Edo State Senior Secondary Schools Systems. *JORIND*. 12 (2), pp. 272-277. Available at: www.transcampus.org/journals:www.ajol.info/journals/jorind (Accessed 19 June 2017)

Alase, A., 2017. An Interpretative Phenomenological Analysis of the Common Core Standards Program in the State of State of South Dakota. *International Journal of Education and Literacy Studies*, 5 (3), pp. 24-34

Allen, J.E., 2020. Challenges and Prospect of Vocational Technical Education and Training in Tertiary Institution in South-South, Nigeria. *Vocational and Technical Education Journal (VOTEJ)* 2 (1), pp. 273 – 278

Alharahsheh, H.H., and Pius, A., 2020. A Review of key paradigms: positivism VS interpretivism. (pdf) Available at: https://www.researchgate.net/profile/Husam_Alharahsheh/publication/338244145_A_Review_of_key_paradigms_positivism_VS_interpretivism/links/5effbc0245851550508a8ab9/A-Review-of-key-paradigms-positivism-VS-interpretivism.pdf (Accessed 15 September 2020)

Amaeshi, U.F., 2019. Reward Management for Improved Performance of Nigerian Brewing Companies. (pdf) Available at: <https://pmworldlibrary.net/wp-content/uploads/2019/12/pmwj88-Dec2019-Amaeshi-reward-management-for-improved-performance.pdf> (Accessed 15 September 2020)

Andin, C., and Ambotang, A.S., 2015. Students Satisfaction of the Industrial Skills Enhancement Program (INSEP). *International Journal of Vocational Education and Training Research*. 1(2), pp. 27-33. doi: 10.11648/j.ijvetr.20150102.13

Ark, T.V., 2015. The Gold Standard: The Swiss Vocational Education and Training System. Available at: www.gettingsmart.com/.../training-system/ (Accessed 13 June 2017)

Auta, M.S.A. 2015. Strategies for evaluation of Students' Proficiency in Practical Skills in NCE (Technical) Building Technology Education. *International Journal of Vocational and Technical Education* 7, (9), pp. 96 - 99.

Audu, R., Umar, I.Y., and Idris, A.M., 2013. Facilities Provision and Maintenance: Necessity for Effective Teaching and Learning in Technical Vocational Education. *IOSR Journal of Research and Method in Education (IOSR-JRME)* 3(1), pp.28-32. Available at: www.iosrjournals.org/iosr-jrme/papers/vol-3%20Issue-1/E0312832.pdf (Accessed 14 June 2017).

Ayomike, C.S., Okwelle, P.C. and Okeke, B.C., 2015. Towards Quality Technical Vocational Education and Training (TVET) Programmes in Nigeria: Challenges and Improvement Strategies. *Journal of Education and Learning*, 4 (1), pp.25 – 34

Azeem, M., and Salfi, A.A., 2012. Usage of NVIVO Software Qualitative Data Analysis. *Academic Research International* 2 (1), pp. 262–266. Available at: [http://www.savap.org.pk/journals/ARInt./vol.2\(1\)/2012\(2.1-30\).pdf](http://www.savap.org.pk/journals/ARInt./vol.2(1)/2012(2.1-30).pdf) (Accessed 21 July 2017)

Bailey, L., 2015. What Type of Intelligence Do You Have? Available at: <https://www.buzzfeed.com/lukebailey/what-type-of-intelligence> (Accessed 24 July 2017)

Bailey-Morrissey, C., Race, R. (2019) 'Education Policy and Leadership. The lived experiences of Black Women Secondary School Teachers in Miller, P., Callender, C, (Eds.) Race and Leadership in Education, Palgrave Macmillan, Houndsmills, 75-91

Bisalla, A.M. and Adeyemi, A.A., 2016. Reforming Technical and Vocational Education for Industrial Revolution. *International Journal of Innovative Social and Science Education Research* 4 (1), pp. 8 – 13.

Bogna, F., Raineri, A., and Dell, G., 2020. Critical Realism and Constructivism: Merging Research Paradigms for a Deeper Qualitative Study. (pdf) Available at: https://www.researchgate.net/profile/Aldo_Raineri/publication/342246458_Critical_realism_and_constructivism_merging_research_paradigms_for_a_deeper_qualitative_study/links/5f30820392851cd302eba32f/Critical-realism-and-constructivism-merging-research-paradigms-for-a-deeper-qualitative-study.pdf (Accessed 11 September 2020)

Bourner, T., Greener, S., and Rospigliosi, A., 2014. Graduate Employability and the Propensity to Learn in Employment: A New Vocationalism. pp.5-30. Available at:

<https://www.researchgate/publication/259751881-Graduate_employability_and_the_propensity_to_learn_in_employment_a_new_vocationalism> (Accessed 7 May 2017)

Braig, M., 1997. Gender Sensitive Vocational Education and Training. Available at:

www.tzonline.org/pdf/gendersensitivevocational.pdf (Accessed 19 June 2017)

Brannen, J., 2005. Mixing Methods: The Entry of Qualitative and Quantitative Approaches into the Research Process, *International Journal of Social Research Methodology*, 8(3), pp. 173-184

Brubacher, S.P., Timms, L., Powell, M., and Bearman, M., 2019. "She Wanted to Know the Full Story": Children's Perceptions of Open Versus Closed Questions. Available at: <https://www.nationalcac.org/wp-content/uploads/2019/05/%E2%80%9CShe-Wanted-to-Know-the-Full-Story%E2%80%9D-Childrens-perceptions-of-open-versus-closed-questions.pdf> (Assessed 18 April 2021)

Burton, L., 2007. Survey Research: Choice of Instrument Sample. Available at: <ocw.jhsph.edu/courses/HSRE/PDFs/HSRE_lec11_burtonpdf> (Accessed 20 July 2017)

Caena, F., 2011. Literature review Quality in Teachers' continuing professional development. EUROPEAN COMMISSION Education and Training 2020 Thematic Working Group 'Professional Development of Teachers'

Castellan, C. M., 2010. Qualitative and Quantitative Research: A View for Clarity. *International Journal of Education*, 2 (2) pp. 1 – 14. Available at: www.macrothink.org/ije (Accessed 9 October 2017)

Chimezie, C.O. 2012. Vocational Technical Education in Nigeria: Challenges and the way forward. *Management Dynamics*, 2 (6), PP. 1-8

Chinedu-Ali, N.P., Abang, F., Ameh, A.O., and Agwu, N.M., 2020. Perception of Vocational Education Stakeholders on Hindrances to Effective Implementation of TVET Policies in Nigeria. *Vocational and Technical Education Journal (VOTEJ)* 2(1), pp. 156 – 163

Chris, Z. and Lindsay, M., 2015. Vocational and Technical Education. (online) Available at:

<<http://www.oxfordbibliographies.com.DOI:10.1093/OBO/9780199756810-0068>> (Accessed 18 April

2017).

Creswell, J.W., and Creswell, J.D., 2018. Research Design: Qualitative, Quantitative, and Mixed Methods Approaches: Sage Publications

Creswell, J.W., 2014. Research Design: Qualitative, Quantitative and Mixed Methods. Available at: <https://www.amazon.co.uk/Research-Design> (Accessed 26 July 2017)

Creswell, J.W., and Plano Clark, V.L, 2011. Designing and Conducting Mixed Methods Research (2nd ed.). Thousand Oaks, CA, USA: Sage Publications Inc.

Creswell, J.W., 2007. An Introduction to Mixed Methods Research, SSP, University of Nebraska – Lincoln

Creswell, J.W., 2006. Choosing a Mixed Methods Design. A Handbook on Designing and Conducting Mixed Methods Research pp. 58 – 88. Thousand Oaks, CA: Sage

Coonan, E., and Pratt-Adams, S., 2018. Building Higher Education Curriculum Fit for the Future

Denton, T., 2017. Advanced Automotive Fault Diagnosis Automobile Technology: Vehicle Maintenance and Repair. Fourth Edition. (e-book) London and New York: Routledge. Available at: https://books.google.co.uk/books?hl=en&lr=&id=g5ykDAAAQBAJ&oi=fnd&pg=PP1&dq=Five+points+faults+finding+of+an+automobile&ots=w9K37fUCU4&sig=mrkQVb0Z9R9Es3YAp2pRLo7Df04&redir_esc=y#v=onepage&q&f=false (Accessed 15 August 2020)

Diara, B.C.D., and Christian, N.G., 2013. European and American Christian Missions and Nigeria's National Development (1840-1960). Journal of Educational and Social Research MCSER Publishing, Rome-Italy 3 (10), pp. 89 – 99

Dike, V.E., 2013. Technical and Vocational Education and Training (TVET): Understanding the Nigerian Experience. Doctoral Dissertation Submitted to the School of Education Drexel University

Doolittle, P.E., and Camp, W.G., 1999. Constructivism: The Career and Technical Education Perspective. Journal of Vocational and Technical Education, 16 (1). Available at: <https://files.eric.ed.gov/fulltext/EJ598590.pdf> (Accessed 8 April 2021).

Dokubo. I.N., 2017. Technical Vocation Education and Training in South-South, Nigeria: A Veritable Tool for the Sustainable Economic Growth. International Journal of Research – Granthaalayah, 5 (5), pp. 34 – 41

Dokubo, C., and Dokubo, I., 2013. Identifiable Problems Inhibiting the Effective Management of Vocational Education Programmes in Nigerian Universities. European Scientific Journal 9 (22), pp. 357 – 365

Dudovskiy, J., 2016. The Ultimate Guide to Writing a Dissertation in Business Studies: A Step-by-Step Assistance. Available at: <https://research-methodology.net/about-us/ebook/> (Accessed 13 October 2017).

Edisingha, P.A., 2012. Interpretivism and Positivism (Ontological and Epistemological Perspectives). Available at: <https://prabash78.wordpress.com/2012/03/14/interpretivism-and-positivism-and-positivism-ontological-and-epistemological-perspectives> (Accessed 20 July 2017)

Egbo, B., 2011. Teacher Capacity Building and Effective Teaching and Learning: A Seamless Connection. Mediterranean Journal of Social Sciences 2 (5), pp. 11 – 17

Egmir, E. Erdem, C., and Kocyigit, M., 2017. Trends in Educational Research: A Content Analysis of the Studies Published in International Journal of Instruction. International Journal of Instruction, (e-journal) 10(3) pp. 277 – 294 Available through: Anglia Ruskin University Library website <http://libweb.anglia.ac.uk> (Accessed 24 November 2017)

Eichhorst, W., Boeri, T., Coen, A.D., Glasso, V., Kendzia, M., and Steiber, N., 2014. How to Combine the Entry of Young People in the Labour Market with the Retention of Older Workers. IZA Journal of European Labor Studies, 3(19), pp. 1 – 23

Ekpenyong, L.E. 2014. Technical and Vocational Education for National Integration and Transformation. Journal of Vocational and Technical Educators, 4(1), pp. 1-6

Elmusharaf, K., 2018. Qualitative Sampling Techniques Training Course in Research Methodology and Research Protocol Development Geneva 2018. (pdf) Available at: <https://www.qfmer.ch/SRH-Course-2018/research-methodology/pdf/Qualitative-sampling-techniques-Elmusharaf-2018.pdf> (Accessed 14 September 2020)

Emike, O.E., Bassey, B.C., and Ushie, A.M., 2013. Transformation of Vocational Technical Education through Innovative Funding in Nigeria. A paper presented at the 3rd International Conference on Education and the Transformation Agenda of Nations Held at Lagos State University, Ojo. 1st – 5th July 2013

Ethel, E. L. 2014. Creating an Enabling Environment for the Teaching and Learning of Vocational and Technical Education in Nigeria and Sub-Saharan Africa. The Clute Institute International Academic Conference San Antonio, Texas, USA

Etikan, I., Musa, S.A., and Alkassim, R.S., 2016. Comparison of Convenience Sampling and Purposive Sampling. American Journal of Theoretical and Applied Statistics. 5 (1), pp. 1 – 4. Available at: <doi: 10.11648/j.ajtas.20160501.11> (Accessed 14 September 2020)

European Commission, 2011. Attitudes Towards Vocational Education and Training (pdf). Available at: <ec.europa.eu/public_opinion/archives/ebs/ebs_369_en.pdf> (Accessed 9 June 2017)

Eze, T.I., Ezenwafor J.I., and Obi, M.N., 2015. Effects of Age and Gender on Academic Achievement of Vocational and Technical Education (TVE) Students of a Nigerian University. Journal of Emerging Trends in Educational Research and Policy Studies (JETERAPS) 6 (1), pp. 91 – 101

Eze, U.T., and Ike, N.M., 2013. Integrating African Indigenous Knowledge in Nigeria's Formal Education System: Its Potential for Sustainable Development. Journal of Education and Practice, 4(6), pp. 77 – 82.

Eze, S., 2010. Nigeria: Getting Artisans Certified - allAfrica.com. Available at: <http://allafrica.com/stories/201009090459.html> (Accessed 23 July 2017)

Federal Republic of Nigeria, 2004. National Policy on Education (4th Ed) PP.1-62 Yaba. NERDC Press. Available at: wbgfiles.worldbank.org/.../National%20policy%20on%20Education.pdf (Accessed 14 June 2017).

Fink, A.S., 2000. The Role of the Researcher in the Qualitative Research Process. A Potential Barrier to Archiving Qualitative Data. Qualitative Social Research 1(3).

Fielding, N.G., 2012. Triangulation and Mixed Methods Designs: Data Integration with New Research Technologies. *Journal of Mixed Methods Research* (online) DOI: 10.1177/1558689812437101. Available at: <http://mmr.sagepub.com/content/early/2012/03/28/1558689812437101> (Accessed 16 February 2021)

Fleming, G., 2014. Multiple intelligence Types. Available at: <http://www.thoughtco.com/multiple-intelligence-types-1857177> (Accessed 24 July 2017)

Ganon-Shilon, S., Shaked, H. & Schechter, C. 2020. Principals' voices pertaining to shared sense-making processes within a generally-outlined pedagogical reform implementation. *International Journal of Leadership in Education*, <https://doi.org/10.1080/13603124.2020.1770864>

Gardner, H., and Hatch, T., 1989. Multiple Intelligences Go to School: Educational Implications of the Theory of Multiple Intelligences. *American Educational Research Association*. 18 (8), pp. 4 – 10. Available at: <http://www.jstor.org/stable/1176460>. (Accessed 9 May 2021)

Gilchrist, C.L., 2020. The Future of Career and Technical Education. Student Theses, Dissertations, Portfolios and Projects. 350. (pdf) Available at: <https://spiral.lynn.edu/etds/350> (Accessed 9 August 2020)

Goyol, A., and Sunday, G., 2020. Bridging the Skills Gap of Graduates of Technical Colleges and the Industries in Nigeria. *International Journal of Vocational and Technical Education Research* 6 (1), pp.1-9

Gunadi., Alias, M., Herminarto, S., and Triyono, M.B., 2020. Designing Industrial Internship Model to Improve the Skills of Prospective Vocational Teachers. *JOURNAL OF TECHNICAL EDUCATION AND TRAINING* 12 (1) pp. 140–148 (pdf) Available at: <https://publisher.uthm.edu.my/ojs/index.php/JTET/article/view/4497> (Accessed 18 August 2020)

Güngöri, G. 2020. Problems and Solution Suggestions Encountered in Vocational Skill Training in Vocational High Schools: Teachers' Views. (pdf) *European Journal of Education Studies*, 7(4), pp. 233 – 253. Available at: <https://www.oapub.org/edu/index.php/ejes/article/viewFile/3061/5698> (Accessed 10 August 2020)

Goel, V.P. 2009. Reorienting TVET Policy Towards Education for Sustainable Development. (pdf) Ministry of Human Resources Development Government of India. Available at: www.unesco.org/up/india_country_presentation.pdf (Accessed 30 May 2017)

Golafishani, N., 2003. Understanding Reliability and Validity in Qualitative Research. *The Qualitative Report*, 8(4), pp. 597 – 606

Gordon, H.R.D. 2003. *The History and Growth of Vocational Education in America (Second edition)*. (e-book). Illinois: Waveland Press. Available at: <http://hdl.voced.edu.au/10707/85235> (Accessed 26 June 2020)

Greco, L. D., Walop, W., McCarthy, R. H., 1987. Questionnaire Development: 2. Validity and Reliability. (pdf) Available at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1491926/pdf/cmaj00139-0021.pdf> (Accessed 8 July 2020).

Haolader, F. A., and Nickolaus, R., 2012. Technical and Vocational Education and Training Curricula Reform Demand in Bangladesh. An Empirical Study of the Curricula of the Diploma-in-Engineering Programme in Bangladesh and the German Initial Vocational Training in the Dual System and the Curricular Effects

Hassan, M. A., 2017. Research Population. Available at: http://www.academia.edu/5563491/Research_Population (Accessed 19 October 2017)

Hilal, A. H., and Alabri, S. S., 2013. Using NVIVO for Data Analysis in Qualitative Research. International Interdisciplinary Journal of Education, 2 (2), pp. 181-186 Available at: http://www.iiioe.org/v2/IIJOE_06_02_02_2013.pdf (Accessed 20 October 2017)

Hoffman, N., and Schwartz, R., 2015. "Gold Standard: The Swiss Vocational Education and Training System" (Washington, DC: National Centre on Education and the Economy, 2015)

Hogue, R.T., 2011. Constructivism and Qualitative Research. Available at: <http://rjh.goingeast.ca/2011/10/15/constructivism-and-qualitative-research> (Accessed 26 July 2017)

Holden, M.T., and Lynch, P., 2004. Choosing the Appropriate Methodology: Understanding Research Philosophy Available at: [https://repository.wit.ie/1466/1/Choosing_the_Appropriate_Methodology_Understanding_Research_Philosophy_\(RIKON_Group\).pdf](https://repository.wit.ie/1466/1/Choosing_the_Appropriate_Methodology_Understanding_Research_Philosophy_(RIKON_Group).pdf) (Accessed 15 February 2021)

Homby, A.S., 2000. Oxford Advanced Learner Dictionary of Current English. London: Oxford University Press

Howell, R.T., 2002. Gender Inequality in Industrial and Technical Education in Nigeria: Parents' Perspectives in the 21st Century. Journal of Industrial Teacher Education, 39 (2) Available at: scholar.lib.vt.edu/ejournals/JITE/v39n2/ndahi.html (Accessed 19 June 2017)

Idialu, E.E. 2014. Creating an Enabling Environment for the Teaching and learning of Vocational and Technical Education in Nigeria and Sub-Saharan Africa, The Clute Institute International Academic Conference Sam Antonio, Texas, USA.

Idris, A. and Mbudai, Y., 2017. Technical and Vocational Education: Challenges towards Youths Empowerment in Kano State – Nigeria. Journal of Technical Education and Training (JTET) 9 (1), pp. 1 – 12

Ikpe, U.N., 2010. Vocational Technical Education in Nigeria: A Review. Global Journal of Educational Research 9 (1 & 2), pp. 27 – 33. Available at: Anglia Ruskin University Library (Accessed 2 March 2019)

Inyiagu, E.E., 2014. Challenges Facing Technical and Vocational Education in Nigeria. Journal of Educational Policy and Entrepreneurial Research (JEPER), 1 (1), pp. 40 – 45

Iwele, M.U., 2016. Technical and Vocational Education Training Programmes Collaboration with Private Firms: Implications for National Development. Contemporary Journal of Empirical Research, 2 (1) pp.279-300

Jena, A., 2013. Research Methodology and Different Research Approaches. Available at: <https://www.projecturu.in/publications/research-methodology-and...> (Accessed 24 August 2017)

Jeerapattanatorn, P., 2013. Current Issues on Vocational and Technical Education in Nigeria. *Journal of Educational and Social Research* 3 (10), pp. 121 – 125

Joseph, F.H; Many W.C; Arthur, H.M; Phillip, S and Michael J.P. 2011. *Essentials of Business Research Methods* Second Edition. M.E. Sharpe Inc; New York

Jwasshaka, S. K., & Fadila, N. (2020). Minimizing Unemployment of Graduates through Technical Education and Training: Meta-Analysis Approach in Nigeria. *International Journal of Academic Research in Business and Social Sciences*, 10(2), 34–44

Kajornboon, A. B., 2005. Using Interview as Research Instruments. Available at: www.culi.chula.ac.th/Research/e-journal/bod/Annabel.pdf (Accessed 20 October 2017)

Katsande, Tapiwa E. (2016) *Vocational education and training in rural Zimbabwe: the case of Murewa District*. Doctoral thesis, Anglia Ruskin University

Kelly, K., Clark, B., Brown, V., and Sitzia, J., 2003. Good Practice in the Conduct and Reporting of Survey Research. *International Journal for Quality in Health Care* 15 (3), pp. 261-266

Kemavor, A.K., and Kassah, J.K., 2015. Challenges of Technical and Vocational Education and Training and Educational Stakeholders in the Volta Region of Ghana. *International Journal of Humanities Social Sciences and Education (IJHSSE)* 2 (6), pp. 70 – 79.

Khalaf, M.E., Abubakr, N.H., Alenezi, H., Hassan Ziada, H., 2021. The Motivation and Confidence in Choosing Dentistry as a Career Amongst Dental Students: A Mixed Methods Study. Available at: <https://onlinelibrary.wiley.com/doi/pdf/10.1111/eje.12673> (Accessed 16 February 2021)

Kopsen, J., 2019. Demands-based and employer-driven curricula: defining knowledge in higher vocational education and training studies in continuing education. DOI:10.1080/0158037X2019.1661238. Available at: Anglia Ruskin University. (Accessed 14 June 2020)

Kreysing, M., 2001. *Vocational Education in the United States: Reforms and Results – Cede* (pdf).

Available at: www.cedefop.europa.eu/files/etv/upload/information.../232/23_en_krey-sing.pdf

Kothari, C.R., 2004. *Research Methodology Methods and Techniques*. Second Revised Edition. Daryaganj. New Age International Limited Publishers

Kuknor, S., and Bhattacharya, S., 2021. Organizational Inclusion and Leadership in Times of Global Crisis. Available at: <https://ro.uow.edu.au/cgi/viewcontent.cgi?article=2198&context=aabfi> (Accessed 26 February 2021).

Kvale, S., 1996. *Interview Views: An Introduction to Qualitative Research Interviewing*. Thousand Oaks, CA: Sage Publications. Available at: [www.scirp.org/\(S\(351jmbntvnsjt1aadkposzje](http://www.scirp.org/(S(351jmbntvnsjt1aadkposzje). (Accessed on 13 June 2017)

Lajeunesse, T, Jefferson, C, Nuffield, J, & Majury, D. 2000. The Cross-Gender Monitoring Project Third and Final Annual Report. Canada: Therese Lajeunesse and Associates Ltd

Lawson, T. 2004. A Conception of Ontology. Available at: www.csog.group.cam.ac.uk/A_Conception_of_Ontology.pdf (Accessed 20 July 2017)

Lilly, G., and Efajemue, O. O., 2011. Problems of Vocational Teacher Education in Rivers State of Nigeria Journal of Educational and Social Research, 1 (5), pp. 624-630

Longhurst, R., 2020. Semi-structured Interviews and Focus Groups. Available at: http://dsc.du.ac.in/wp-content/uploads/2020/04/3.4-Semi_structured-Interviews-Focus-Groups.pdf (Accessed 25 February 2021)

Loo, S., and Jameson, J., 2017. Vocationalism in Education Policy, (Online) Available at: https://www.researchgate.net/publication/25975188_graduate_employability_and_the_propensity_to_learn_in_employment_a_new_vocationalism (Accessed 7 May 2017)

Maddocks, S., Chetty, V., Maghoo, A., Mhlongo, N., Mthembu, N., Khanyile, S., Chiliza, S., Munsamy, T., Gamede, Z., and Mazibukoc, S., 2018. 'Treating a patient should be approached in a holistic manner': collaboration of doctors and physiotherapists in the rehabilitation of people living with HIV, (online) South African Family Practice, 60 (2), pp. 53–57 Available at: <https://doi.org/10.1080/20786190.2017.1382969> (Accessed 29 January 2021)

Majundar, S., 2013. Revisiting global trends in TVET: Reflections on Theory and Practice. UNESCO-UNEVOC International Centre for Technical and Vocational Education and Training. Bonn Germany

Mamabolo, A., and Myres, K., 2020. A systematic literature review of skills required in the different phases of the entrepreneurial process, Small Enterprise Research, (Online) Available at: <https://doi.org/10.1080/13215906.2020.1730230> (Accessed 4 March 2021)

Mamman, A., 2013. Time management in teaching of technical education in Nigeria: The case of Kaduna Polytechnic. International Journal of Development and sustainability, 2(2), pp. 1357–1364

Marriam, S.B., 1998. Qualitative Research and Case Study Applications in Education. Scan Francisco, CA: Josey-Bass Publishers

Maxwell, B.R., 2019. Institutional Review Boards in Qualitative Research: Has it Gone Overboard? Canadian Journal of Action Research 20 (1), pp. 52 – 70

Menin, S., 2012. Why It's Important to Always Use Tolerances. Available at: <http://www.designworldonline.com/why-its-important-to-always-use-tolerances/> (Accessed 24 October 2017)

Misko, J., 2006. Vocational Education and Training in Australia, the United Kingdom and Germany. National Centre for Vocational Education Research (NCVER)

Miller, P.G., Johnston, J., Dunn, M., Fry, C.L., and Degenhardt, L., 2010. Comparing Probability and Non-probability Sampling Methods in Ecstasy Research: Implication for Internet as a Research Tool. 45(3), pp. 437 - 450. Available through: Anglia Ruskin University Library website <http://libweb.anglia.ac.uk> (Accessed 17 November 2017)

Mima-Eyovwunu, D., Tene-Omadide, V., Yahaya, A.N., and Orueyegha, S., 2020. Vocational and Technical Education, Importance, Challenges, and Way Forward: A Case Study of VTE Department in Colleges of Education, Delta State, Nigeria. International Journal of Innovative Social and Science Education Research. 8(1), pp. 98 - 110

Nghia, T.L.H., Pham, T., Tomlinson, M., Medica, K., and Thompson, C.D., 2020. Developing and Utilizing Employability Capitals Graduates' Strategies Across Labour Markets. (e-books) London and New York: Routledge Taylor and Francis Group. Available at: https://www.researchgate.net/profile/Tran_Nghia8/publication/338961245_Developing_and_Utilizing_Employability_Capitals_Graduates'_Strategies_across_Labour_Markets/links/5e42165ca6fdccd9659a29ec/Developing-and-Utilizing-Employability-Capitals-Graduates-Strategies-across-Labour-Markets.pdf (Accessed 8 August 2020)

Noble, H., and Smith, J., 2015. Issues of Validity and Reliability in Qualitative Research. (pdf) Available at: <http://eprints.hud.ac.uk/id/eprint/23995/1/SmithIssues.pdf> (Accessed 25 July 2020)

Nwafor C.E., and Okpaga, A.F., 2015. TVET and Local Technologies for Sustainable Entrepreneurial in Innovation and Industrial Skills Development in Nigeria South Eastern States. International Journal of Humanities Social Sciences and Education (IJHSSE), 2 (7), pp. 147-153

Nwafor, N.H.A., 2014. Philosophy of Education and National Development: A Philosophical Appraisal. Information and Knowledge Management, 4(6) pp.92-97

Nwogu, P.O. and Nwanoruo, C.C., 2011. Vocational Technical Education and Training for Self-Reliance: Towards National Development. Mediterranean Journal of Social Sciences, 2 (5), pp.55 – 59

Nwokeocha, M.S. 2015. Academic Staff Working Conditions, Organizational Commitment and Performance of Nigerian Universities. Unpublished PhD. Thesis Anglia Ruskin University, United Kingdom

Nwosu, J.C., and Micah, E.M., 2017. Technical and Vocational Education and Training as a Tool for National Sustainable Development in Nigeria. The International Journal of Social Sciences and Humanities Invention 4(9), pp. 3983 – 3988

Ochola, N. & Kavinda, L. 2019. Grand strategies and performance of private technical and vocational education and training colleges in Nairobi County, Kenya. International Academic Journal of Human Resource and Business Administration, 3(7), 425-440

Odo, J.U., Okafor, W.C., Odo, A.L., Ejikeugwu and Ugwuoke., 2017. Technical Education – The Key to Sustainable Technological Development. Universal Journal of Educational Research 5 (11), pp. 1878 – 1884

Odu, K.O., 2011. Philosophical and Sociological Overview of Vocational and Technical Education in Nigeria. American- European Journal of Scientific Research 6 (1), pp. 52-57

Odu, K. O., 2007. Causes and Control of Wastage in Vocational Technical Institutions. Journal of Educational Research and Policy, 2 (4) pp.35-40

Ogundele, A.G., Waziri, U.M. and Idris, B.B. 2014. Vocational and Technical Education in Nigeria: Centenary Development and Challenges. International Journal of Educational Research and Information Science. 1, (3), pp.33-37 (online) Available at: <http://www.openscienceonline.com/journal/eris> (Accessed 7 June)

Ojimba, D.P., 2012. Vocational and Technical Education in Nigeria: Issues, Problems and Prospects' Dimensions (IPP). Journal of Educational and Social Research, 2 (9), pp. 23 – 30

Ojimba, D.P., 2013. Technical and Vocational Education: Imperatives for Social-Economic and Political Stability in Nigeria. European Scientific Journal, 9 (19), pp. 9 – 18

Okolie, U.C., Igwe, P.A., Eneje, B.C., Nwosu, H., and Mlanga, S., 2019. Enhancing Graduate Employability: Why Higher Education Institutions Have Problems with Teaching Generic Skills? (pdf) Available at: <http://eprints.lincoln.ac.uk/id/eprint/37695/1/Enhancing%20Graduate%20Employability%20in%20Nigeria%20-%20Policy%20Futures.pdf> (Accessed 7 August 2020)

Okoye, K, R.E., and Nkanu, S.M., 2020. Employers' Identification of Skills Needed by Technical and Vocational Education Graduates for Industrial Work Effectiveness. (pdf) Journal of Education, Society and Behavioural Science 33(2), pp. 32-41. Available at: <https://journaljesbs.com/index.php/JESBS/article/view/30200> (Accessed 8 August 2020)

Okoye, R. and Arimonu, M.O., 2016. Technical and Vocational Education in Nigeria: Issues, Challenges and a Way Forward. Journal of Education and Practice. 7 (3), pp. 113 – 118

Okoye, K.R.E. 2014. Challenges of Technical and Vocational Education and Training (TVET) for National Integration and Transformation, Journal of Vocational and Technical Educators, 4 (1), pp. 7-19

Okoye, K.R.E., and Okwelle, P. C., 2014. Technical Vocational Education and Training (TVET) as Intervention Mechanism for Global Competitiveness: Perspectives from Nigeria. Developing Country Studies, 4(4), pp. 85 – 91

Okolocha, C. C. 2012. Vocational Technical Education in Nigeria: Challenges and the way forward, Business Management Dynamic, 2 (6), pp. 1- 8

Okonkwo, G. A & Okoh, P.A. 2014. Challenges and Prospects of Vocational/Technical Education for National Integration and Transformation, Journal of Vocational and Technical Education, 4 (1), pp. 45 – 49

Okorie, J. U., 2001. Vocational Industrial Education League of Researchers in Nigeria, Bauchi, Nigeria.

Okoro, N.P., 2011. Comparative Analysis of Nigeria Education System. International Journal of Business and Social Science, 2(21), pp. 234 – 238.

Okoro, O.M. 1993. Principles and Methods in Vocational and Technical Education. Nsukka: University Trust publishers

Olaitari, I.D., 2015. The Role of Vocational and Technical Education for Sustaining Living in a period of Security Challenges in Nigeria. *European Journal of Education Studies*. Available at: <http://www.oapub.org/edu> Retrieved on 25 June 2019

Oludeyi, O.S., 2015. A Review of Literature on Work Environment and Work Commitment: Implication for Future Research in Citadels of Learning. *Journal of Human Resource Management*, 5(11), pp. 32 – 46

Olutope, E.J., 2014. Infrastructural Facilities and the Practice of Vocational Business Education in Nigeria. (pdf) Available at: <http://iosrjournals.org/iosr-jhss/papers/Vol19-issue5/Version-5/A019550105.pdf> (Accessed 5 September 2020)

Onwenonye, C., 2015 'The Need for Sound Vocational, Technical Education Teachers', *The Pointer*, March 30, p. 17

Onwenonye, C., 2012. Training Needs of Vocational Instructors in Nigerian Prisons: Unpublished M.Ed. Thesis. Department of Vocational Education, Nnamdi Azikiwe University, Awka

Onwueme, M. & Ugbor, O., 1994. *Education and Society. The Sociology of Education*. Benin City: Nera Publications

Oranu, R.N., 2003. Vocational and technical education in Nigeria. (pdf) Available at: http://www.ibe.unesco.org/fileadmin/user_upload/archive/curriculum/AfricaPdf/lago2ora.pdf (Accessed 25 July 2020)

Osam, I. 2013. Implementing Vocational and Technical Education Programmes in South-South Nigeria: A Case of Rivers State. *International Journal of Scientific Research in Education*, 6 (2), pp. 128-148, Available at: <<http://www.ij sre.com>> (Accessed 9 March 2016)

Otara, A., 2012. The Future of Education and its Challenges in Africa. *International Journal of Humanities and Social Science* 2 (2), pp. 151 – 156

Oyeleke O. & Akinyeye C.O. 2013. Curriculum Development in Nigeria; Historical Perspectives. *Journal of Educational and Social Research*, 3 (1), pp. 73 – 80

Oviawe, J.I., 2017. Fostering Students' Enrolment in Technical Education Programmes through Career Guidance and Occupational Awareness. *Education Journal*, 6(4), pp. 125 – 135

Palak, D., and Walls, R.T., 2009. Teachers' Beliefs and Technology Practices: A Mixed-methods Approach. (pdf) Available at: <https://files.eric.ed.gov/fulltext/EJ844274.pdf> (Accessed 27 July 2020)

Phellas, C. N., Bloch, A., and Seale, C., 2011. *Structured Methods: Interviews, Questionnaires and Observation*. Available at: http://www.sagepub.com/.../upm-binaries/47370_seale_11.pdf (Accessed 16 October 2017)

Prosser, C.A., Quigley, T.H., 1949. *Prosser's Sixteen Theorems on Vocational Education a Basis for Vocational Philosophy*. (pdf). Available at: www.morgancc.edu/docs/Glossary/content/PROSSER.PDF (Accessed 9 July 2017)

Puyate, S.T., 2008. Constraints to the Effective Implementation of Vocational Education Programme in Private Secondary Schools in Port Harcourt Local Government Area. *Asia-Pacific Journal of Cooperative Education*, 9 (1), pp. 59 – 71

Reynaldo, L., and Martinez, Jr., 2007. An Evolving Set of Values-Based Principles for Career and Technical Education. *Journal of Career and Technical Education*, 23 (1), pp. 72 – 84. Available at: <https://files.eric.ed.gov/fulltext/EJ901311.pdf> (Accessed 19 February 2021)

- Riegler, A., 2012. Chapter 13 Constructivism. Available at: <[univie.ac.at/constructivism/people/riegler/pub/Rieler%20A.%20\(2012\)%20Constructivism.pdf](http://univie.ac.at/constructivism/people/riegler/pub/Rieler%20A.%20(2012)%20Constructivism.pdf)> (Accessed 20 July 2017)
- Robbin, D.J., 1992. Gender Equity in Vocational Education. Available at: <www.2.edc.org/womensEquity/pubs/digests/digest-vocedhtml> (Accessed 19 June 2017)
- Saidu, S.G., Abba, K.Z., and Malgwa, J.B. 2015. Repositioning Vocational and Technical Education in Nigeria. *Donnish Journal of Agricultural Extension and Rural Development*, 1 (1), pp. 001 – 004
- Saldaña, J., 2013. *The Coding Manual for Qualitative Researchers*. Second Edition. (e-book) London: Sage. Available at: <http://emotrab.ufba.br/wp-content/uploads/2020/09/Saldana-2013-TheCodingManualforQualitativeResearchers.pdf> (Accessed 7 March 2021)
- Serumu, I. 2015. Challenges of Implementing Technical and Vocational Education (TVET) Curriculum in Delta State Colleges of Education. *Global Advanced Research Journal of Educational Research and Review*, 4 (5), pp. 72 – 80.
- Scott, W.V., and Deirdred, D.J., 2009. *Research Methods for Everyday Life. Blending Qualitative and Quantitative Approaches*. Jossey-Bass in Francisco.
- Seyi, D. 2014. An Overview of Vocational and Technical Education in Nigeria Under Secondary School Education System. *International Journal of Technology Enhancements and Emerging Engineering Research*, 2 (6), pp. 119-122, Available at: www.ijteee.org/final-print/june2014/Anoverview-of-vocational-And-Technical-Education-in-Nigeria-under-secondary-school-education-system.pdf (Accessed 2 June 2017)
- Shoji, M. and Sam, S., 1993. Technology Education in Japan. *Journal of Technology Education*, 5(1), pp.29-37
- Snow, A.J., 2012. An Assessment of Student Performance in Career and Technical Education Programs and on Core Academic Subject Areas. Doctoral Thesis, Department of Instructional Systems and Workforce Development, Mississippi State University, Mississippi
- Sofoluwe, A.O., 2014. Re-Engineering Vocational and Technical Education for Sustainable Development in North Central Nigeria *Makerere Journal of Higher Education*, 6 (1), pp. 53 – 66 DOI: <http://dx.doi.org/10.4314/majohe.v7i1.5> © The Author(s) 2014 Reprints & permission: EASHESD <http://ajol.info/majohe>
- Soiferam, L.K. 2010. Compare and Contrast Inductive and Deductive Research Approaches. Available at: <files.eric.ed.gov/fulltext/ED542066pdf> (Accessed 20 July 2017)
- Stranton, E.O., 2003. An Inquiry into Equal Opportunities of Employment for Non-EU Nationals Ireland with an Examination of Practice in the Health Board,(online) Available at: <www.att.com> (Accessed 24 April 2016)
- Temiz, G., 2021. An Instructional Planning and Implementation of a Museum Tour Addressing Multiple Intelligences for First Graders. *Participatory Educational Research (PER)* 8(3), pp. 24-43
- Tewksbury, R., 2009. Qualitative Versus Quantitative Methods: Understanding Why Qualitative Methods are Superior for Criminology and Criminal Justice. *Journal of Theoretical and Philosophical Criminology*, 1 (1), pp. 38 – 58

Triki, N.M.M., 2010. A Critical Assessment of the Technical and Vocational Education and Training Programme for the Libyan Chemical Industry. PhD Thesis Edinburgh Napier University. School of Engineering and the Built Environment

Tripp, D., 2005. Action Research: A Methodological Introduction. Available at: www.scielo.br/pdf/ep/v31n3/en_a09v31n3.pdf (Accessed 20 July 2017)

Ubom, A.E.B., Haruna, O.I., and Aregbesola, B.G., 2013. Vocational and Technical Education in Nigeria: Issues, Challenges and the Way Forward. *Journal of Education and Vocational Research*, 4 (8), pp. 219 – 224

Udofia, A.E., Ekpo, A.B., Nsa, S.O., Akpan, E.O., 2012. *Mediterranean Journal of Social Sciences*, (e-journal) 3(14). Available at: <Doi:5901/mjss.2012.v3n14p118> (Accessed 22 May 2017)

Umunadi, E.K., 2013. Functional Vocational and Technical Education Curriculum for Sustainable Youth Empowerment I Nigeria. *British Journal of Education* 1 (1), PP. 7-13

UNESCO-UNEVOC, 2019. TVET Country Profile Israel. (online). Available at: <https://unevoc.unesco.org/home/TVET%20Country%20Profiles> (Accessed 28 June 2020)

UNESCO-UNEVOC, 2019. TVET Country Profile Nigeria. (online). Available at: <http://www.unevoc.unesco.org/l/589> (Accessed 28 June 2020)

UNESCO-UNEVOC, 2018. TVET Country Profile Australia. (online). Available at: https://unevoc.unesco.org/wtdb/worldtvetdatabase_aus_en.pdf (Accessed 28 June 2020).

UNESCO-UNEVOC, 2018. TVET Country Profile Brazil. (online). Available at: <http://www.unevoc.unesco.org/l/589> (Accessed 28 June 2020)

UNESCO-UNEVOC, 2018. TVET Country Profile China. (online). Available at: <http://www.unevoc.unesco.org/l/589> (Accessed 28 June 2020)

UNESCO-UNEVOC, 2018. TVET Country Profile Kenya. (online). Available at: <http://www.unevoc.unesco.org/l/589> (Accessed 28 June 2020)

UNESCO, 1989, June. Innovative Methods of Technical and Vocational Education. Federal Ministry of Education and Science, Germany

UNESCO, 2003. Gender and Education for all: The Leap for Equality(pdf) Global Monitoring Report 2003/20004. Paris, France. Available at: <www.efareport.unesco.org> (Accessed 22 May 2017)

UNESCO, 2004, October. *Learning for work, citizenship and sustainability*. Final report, (pdf) UNESCO International Experts Meeting. Bonn, Germany, 25-28. Available at: <www.unesco.org/sustainable> (Accessed 22 May 2017)

Varpio, L., Paradis E., Uijtdehaage S., and Young, M., 2020. The Distinctions Between Theory, Theoretical Framework, and Conceptual Framework. (pdf) Available at: DOI: 10.1097/ACM.0000000000003075 (Accessed 16 September 2020)

Webb, N. M., Shavelson, R. J., and Haertel, E. H., 2006. Reliability Coefficients and Generalizability Theory. *Handbook of statistics*, vol.26. Available at: https://link.springer.com/referenceworkentry/10.1007%2F978-94-007-0753-5_2463 (Accessed 13 October 2017)

Willmott, H., 2020. On Research Methodology. (pdf) Available at: https://www.jstage.jst.go.jp/article/jscos/1/1/1_1/pdf (Accessed 27 July 2020)

Winter, D. (2009) Theory of work adjustment. A publication of the Career Group, University of London Available at: http://careersintheory.files.wordpress.com/2009/10/theories_twa.pdf (Accessed 26 July 2017)

Wodi, S. W. and Dokubo, A. 2012. Innovation and Change in Technical and Vocational Education in Nigeria: Challenges for Sustainable Industrial Development. British Journal of Arts and Social Sciences (e-journal) 10 (1), Available at: www.bjournal.co.uk/paper/BJASS_10_1/BJASS_10_01_05.pdf (Accessed 11 June 2017)

Worldometer., 2020. Nigeria Population. Available at: <https://www.worldometers.info/world-population/nigeria-population/> (Accessed 11 August 2020).

Yaro, A.S. and Cheledi, A.A., 2012. Technical Education and its Challenges in Nigerian Tertiary Institutions: The Way Forward. Journal of Science, Technology and Education, 1 (1), pp. 137 – 141

Yildirim, T.O., Yılmaz, E., Engin, D. C., and Aksu, M., 2021. A Qualitative Evaluation of a Non-Thesis Graduate Program of Human Resources Development in Education. Kastamonu Education Journal, 29 (1), pp. 13 – 24

Zite, B.N., and Deebom, M.T., 2017. Enhancing Technical Vocational Education and Training (TVET) as a Tool for National Development in Nigeria: Issues, Challenges and Strategies. Journal of Education, Society and Behavioural Sciences, 21 (4), pp. 1 – 9

List of Supporting Papers (LSP)

Onwenonye, C., (2020) 'Investigation of the Factors Affecting Effective Implementation of Vocational Technical Education Programmes in Delta State, Nigeria'. *Review of African Educational Studies (RAES)*, 1 (1), pp. 16 – 32

Onwenonye, C., (2019) 'An Appraisal of the Development and Functioning of Vocational Education and Training in Nigeria'. *International Journal of Vocational and Technical Education Research*, 5 (3) 40 – 49

Onwenonye, C., (2018) 'Vocational Technical Education in Nigeria: Journey Thus Far and the Way Forward'. Beau Bassin: Lambert Academic Publishing. ISBN: 978-613-9-92621-3

Onwenonye, C. (26 April 2018) 'Apprenticeship in Technical Vocational Education and Training (TVET)'. Westminster Conference UK

Onwenonye, C., (June 2016) 'The Future for Degree Apprenticeships and Higher-level Education'. Westminster Conference UK

Onwenonye, C. (2016) 'Dimensional Approaches to the Challenges of Vocational Technical Education in Nigeria'. 5th Applied Research Conference in Africa (ARCA) Conference, 25 – 27 August 2016, Cape Coast, Ghana

Appendix i -Participants consent form



PARTICIPANT CONSENT FORM.

Name of Participant:

Title of the project: Evaluation of the Factors Affecting the Success of Vocational Technical Education Programmes in Higher Institutions in Delta State, Nigeria.

Name of Researcher: Cletus Onwenonye

1. I agree to take part in the above research. I have read the participant Information Sheet (8.2.16 V1.1) for the study. I understand what my role will be in this research, and all my questions have been answered to my satisfaction.
2. I understand that I am free to withdraw from the research at any time, without giving a reason.
3. I am free to ask any questions at any time before and during the study.
4. I understand what will happen to the data collected from me for the research.
5. I have been provided with a copy of this form and the participant Information Sheet.
6. I understand that quotes from me will be used in the dissemination of the research.
7. I understand that the interview will be recorded.

Data Protection: I agree to the university's processing personal data which I have supplied. I agree to the processing of such data for any purposes connected with the Research Project as outlined to me.

Name of participant (print).....Signed..... Date.....

Name of person

Witnessing consent (print).....Signed..... Date.....



PARTICIPANT INFORMATION SHEET GUIDANCE

Section A: The Research Project

1. **Title of project:** Evaluation of the Factors Affecting the Success of Vocational Technical Education Programmes in Higher Institutions in Delta State, Nigeria.
2. **Brief summary of research.** This research is set out to identify the factors affecting the delivery of vocational technical education programmes in higher institutions in Delta State and the strategies to be adopted to deliver effective vocational technical education programmes in the state.
3. **Purpose of the study:** The purpose of the study is to:
 - i. Identify the factors affecting the delivery of vocational technical education programmes in Delta State Nigeria.
 - ii. Find out the how vocational technical education programmes are perceived by trainers, trainees and employers in Delta State.
 - iii. Find out the strategies that should be adopted to deliver effective vocational technical education programmes in Delta State, Nigeria.
4. **Name of my supervisor:** Dr. Simon Pratt-Adams
5. **Why have I been asked to participate?** You have been asked to participate in the research because you have a stake in vocational technical education programmes in one way or the other.
6. **How many people will be asked to participate?** The people to participate in the research are: Vocational technical educators, trainees, and the manager/representative of selected industries. The total number of people that will participate in the study is fifty.
7. **What are the likely benefits of taking part?** The benefit of taking part in the research is a workable vocational technical education programmes for the state that will meet the needs of the society in which you belong.
8. **Can I refuse to take part?** You can refuse to take part or withdraw your data from the study at any time. All that is needed to withdraw your data from the study is to inform me or my supervisor that you are withdrawing from taking part in the study. Withdrawal from the study is allowed within one month of your participation when your data has not been processed and used in the study
9. **Has the study got ethical approval?** The study has ethical approval from The Faculty of Health Social Care and Education Department Ethics Panel in Anglia Ruskin University United Kingdom.
10. **Has the organisation where you are carrying out the research given permission?** Permission has been sought for and given from the organisations where the research will be

conducted. I applied to the gate keepers of the institutions to be used to carry out my research with a recommendation letter from Anglia Ruskin University introducing me as a PhD research student of the university and my application was approved.

- 11. Source of funding for the research:** The research is funded by the Tertiary Education Trust Fund (TETFUND) through the Federal College of Education (Technical) Asaba, Delta State, Nigeria.
- 12. What will happen to the results of the study?** The results of the study will be written up for my PhD thesis and submitted to Anglia Ruskin University and my sponsors – TETFUND and Federal College of Education (Technical) Asaba, Delta State, Nigeria.
- 13. Contact for further information:** Cletus.onwenonye@student.anglia.ac.uk

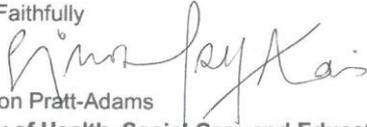
Pratt-Adams, Simon <simon.pratt-adams@anglia.ac.uk>

Section B: Your Participation in the Research Project

- 1. What will I be asked to do?** You will be asked to fill a questionnaire and to speak on what you think are the factors affecting the success of vocational technical education programmes in higher institutions in Delta State and what should be done for effective delivery of the programmes in the state.
- 2. Will my participation in the study be kept confidential?** Your participation in the study will be kept confidential by using anonymous names and information that will be supplied shall only be used for the purpose of the study.
- 3.** Your quotes during interview shall be used and referred to in the study without reviewing your identity.
- 4.** I shall use recording equipment during interview for audio-recording purposes only.
- 5.** You shall have no need of travelling for the purpose of participating in this research study because I will come to you.
- 6.** There shall be no incentives for participating in this research as there was no provision made for it. However, you shall benefit from the result of the study indirectly through effective delivery of vocational technical education programmes in the state where you are residing.
- 7. Are there any possible disadvantages or risks to taking part?** You can have the risk of fatigue in the process of the interview. If this should occur, we shall have a break and shall continue after the break the same day or another agreed date. Your agreement to participate in the study does not affect your legal right to withdraw at any time.
- 8. Whether I can withdraw at any time and how.** You are free to withdraw your participation from the study at any time without giving a reason. If you wish to withdraw at any time, all that you need to do is to email me and inform me that you are withdrawing from the study. This will help me to exclude the information you supplied from being used for analysis. Your intention to withdraw should be made known within one month before the processing of the data you supplied.

9. There are no special precautions you must take before, during and after taking part in the study.
- 10. What will happen to any information or data that are collected from you?** Information or data that will be collected from you shall be securely held in my flash drive which shall be password protected and stored in a locked drawer and shall only be used for the purpose of the study.
11. The summary of the research findings shall be sent to you electronically through your institution/industry.
- 12. Contact details for complaints:** If you have any complaints about the study, you can contact me or my supervisor. You can also contact Anglia Ruskin University unit via email address: complaints@anglia.ac.uk Postal address: Office of the Secretary and Clerk, Anglia Ruskin University, Bishop Hall Lane, Chelmsford, Essex, CM1 1SQ.

Appendix iii-Letter of introduction from ARU

8 February 2017	 Anglia Ruskin University					
	Cambridge Chelmsford Peterborough					
	Cambridge campus East Road Cambridge CB1 1PT T: +44 (0)1223 363271 www.anglia.ac.uk @angliaruskin facebook.com/angliaruskin					
To whom this may concern						
I am writing this letter of introduction on behalf of Mr Cletus Onwenonye .						
I am writing to confirm that Mr Onwenonye (student ID: 1450420) is an international doctoral student in the Faculty of Health, Social Care and Education at Anglia Ruskin University, based in Cambridge, United Kingdom.						
He is in his second year of his studies evaluating THE FACTORS AFFECTING THE SUCCESS OF VOCATIONAL TECHNICAL EDUCATION PROGRAMMES IN HIGHER INSTITUTIONS IN DELTA STATE, NIGERIA.						
In order to carry out his research he needs to gain access to some statistical data that he needs for his study. He has been informed by this university that he is only able to request publicly available data and that he should not ask for any information that would normally require ethical approval.						
Thank you in advance for your support with this important piece of work.						
Should you have any questions you are welcome to contact me by telephone 0044 7540 122 105 or by email simon.pratt-adams@anglia.ac.uk						
Yours Faithfully  Dr Simon Pratt-Adams Faculty of Health, Social Care and Education Anglia Learning and Teaching						
Tele: 0845 196 3520; Work Mobile: 07540 122105 Twitter: @simonprattadams						
						

Appendix iv-Application for use of institutions

Anglia Ruskin University

East Road, Cambridge

CB 1 1PT

United Kingdom

27th March 2017

The Registrar

Federal College of Education Technical

PMB 1044, Asaba

Delta State, Nigeria.

Sir,

APPLICATION FOR APPROVAL TO USE YOUR INSTITUTION IN THE CONDUCT OF MY PHD RESEARCH.

I hereby apply for permission to use your institution as one of the locations in the conduct of my PhD research at Anglia Ruskin University, Cambridge Campus UK. The research will involve administration of questionnaire and interview of some staff and students of the department.

Find attached is the introduction letter from my institution in UK.

Thanks for your understanding and anticipated response.

Yours faithfully



Cletus Onwenonye

Anglia Ruskin University
East Road, Cambridge
CB 1 1PT
United Kingdom
1st February 2018

The Head of Department
Vocational Technical Education
Delta State University

Abraka.

Sir,

APPLICATION FOR APPROVAL TO USE YOUR INSTITUTION IN THE CONDUCT OF MY PHD RESEARCH.

I hereby apply for permission to use your institution as one of the locations in the conduct of my PhD research at Anglia Ruskin University, Cambridge Campus UK. The research will involve administration of questionnaire and interview of some staff and students of the department.

Find attached is the introduction letter from my institution in UK.

Thanks for your understanding and anticipated response.

Yours faithfully



Cletus Onwenonye

**Appendix v-Approvals from institutions used
First Institution**

FEDERAL COLLEGE OF EDUCATION, (TECHNICAL) P.M.B. 1044 ASABA DELTA STATE	
<i>Memorandum</i>	
From: Registrar	
To: Mr. Cletus Onwenonye ✓	Date: 4 th April, 2017

ufs: HOD, Automobile Technology Education

RE: APPLICATION FOR APPROVAL TO USE YOUR INSTITUTION IN THE CONDUCT OF MY PH.D RESEARCH

I am delighted to acknowledge the receipt of your letter dated 27th March, 2017, on the above subject matter.

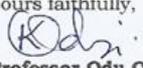
The Management has graciously approved your request to carry out the research work in the College.

Consequently, you are to ensure that your findings are not detrimental to the image of the College and strictly confidential.

Wishing you success in your academic endeavour.


R. M. F. Adepoju
Registrar

Second Institution

	DELTA STATE UNIVERSITY, <i>P.M.B. 1, Abraka, Delta State</i> DEPARTMENT OF TECHNICAL EDUCATION FACULTY OF EDUCATION, P.M.B. 1, ABRAKA, DELTA STATE <i>OFFICE OF THE HEAD OF DEPARTMENT</i> E-mail: techbuseduc@gmail.com
Date: 6 th February, 2018	
<p>Cletus Onwenonye (Student ID: 1450420), Anglia Ruskin University, East Road, Cambridge, CBIIPT, United Kingdom Sir/Ma,</p>	
RE: PERMISSION TO USE TECHNICAL EDUCATION DEPARTMENT, DELTA STATE UNIVERSITY ABRAKA, NIGERIA, AS A LOCATION TO CONDUCT A PhD RESEARCH	
<p>With reference to your application for permission to use the Department of Technical Education, Delta State University, Abraka, Nigeria, as one of the locations to conduct a PhD research at Anlia Ruskin University, Cambridge Campus, UK, I wish to convey to you that your request has been granted.</p> <p>I wish to opine that the information sought for, be treated in strict confidence and should not involve ethical issues.</p> <p>Thank you.</p> <p>Yours faithfully,  Professor Odu Oji Kennedy Head of Department</p>	

Appendix vi-Interview instrument used for data collection.

INTERVIEW QUESTIONS FOR EMPLOYERS

Research question one: What are the factors affecting the success of vocational technical education programmes in higher institutions in Delta State Nigeria?

1. As an employer, what do you think are the strengths and weaknesses of vocational technical higher institutions' programmes in Delta State?
2. What do you think are the major challenges facing vocational technical education programme in Delta State?

Research question two: What are the trainers', trainees' and employers' perceptions on the factors affecting the success of graduates from vocational technical education programmes in Delta State, Nigeria?

3. What is your perception on the present state of vocational technical higher institutions in Delta State?
4. What do you think should be the role of the industries in vocational technical education programmes?
5. What do you have to say about the industries' level of satisfaction with the quality of the products (graduates) of vocational technical institutions in the state?

Research question three: What strategies should be adopted for effective delivery of vocational technical education programmes in Delta State, Nigeria?

6. What are your suggestions on how to strengthen vocational technical education programmes to meet the needs of the labour market?
7. What do you think should be done to make vocational technical education learning environment more conducive for effective teaching and learning?

INTERVIEW QUESTIONS FOR TRAINERS (EDUCATORS/TEACHERS)

Research question one: What are the factors affecting the success of vocational technical education programmes in higher institutions in Delta State Nigeria?

1. As a vocational technical education trainer, what do you have to say about the strength and weaknesses of vocational technical higher institutions in Delta State?
2. What do you have to say about the available equipment and machines in the various vocational technical higher institutions in Delta State, when compared with those in the industries where they are likely to be employed?

Research question two: What are the trainers', trainees' and employers' perceptions on the factors affecting the success of graduates from vocational technical education programmes in Delta State, Nigeria?

3. What is your perception on the present state of vocational technical higher institutions in Delta State in terms of meeting the demand of the labour market?
4. What do you think should be the role of the industries in the delivery of vocational technical education programmes in Delta State?

Research question three: What strategies should be adopted for effective delivery of vocational technical education programmes in Delta State, Nigeria?

5. What are your suggestions on how to strengthen vocational technical education programmes in Delta State?
6. What do you have to say about the level of synergy between the industries and vocational technical institutions in Delta State, in terms of practical training of students?
7. What do you think should be done to make vocational technical education learning environment more conducive for effective teaching and learning?

INTERVIEW QUESTIONS FOR TRAINEES

Research question one: What are the factors affecting the success of vocational technical education programmes in higher institutions in Delta State Nigeria?

1. As a trainee (student) of vocational technical education programme, what do you think are the strengths and weaknesses of the training programmes based on your experience?

2. What do you have to say about the available equipment and machines in your institution when compared with those in the industries?

Research question two: What are the trainers', trainees' and employers' perceptions on the factors affecting the success of graduates from vocational technical education programmes in Delta State, Nigeria?

3. As a trainee (student) of vocational technical institution, what is your perception of the training you are receiving in your institution in terms of meeting the practical demand in your area of specialization on graduation?

4. What is your perception on the involvement of industries in the training programmes of vocational technical institutions?

Research question three: What strategies should be adopted for effective delivery of vocational technical education programmes in Delta State, Nigeria?

5. What are your suggestions on how to strengthen vocational technical education programmes?

6. What do you have to say about the level of synergy between the industries and vocational technical institutions in Delta State in terms of practical training of students?

7. What do you think should be done to make vocational technical education learning environment more conducive for effective teaching and learning?

Appendix vii-Questionnaire instrument used for data collection.

QUESTIONNAIRE

Introduction: The title of this questionnaire is Factors Affecting Effective Implementation of Vocational Technical Education Programmes (FAEIVTEP) and is meant to generate data for my study. Answer the questions to the best of your knowledge.

SECTION A: Factors affecting implementation

1.What are the top three factors affecting the effective implementation of VTE programmes in higher institutions in Delta State?

.....
.....

SECTION B: Perception

2. What are the causes of the answer you gave to question one?

.....
.....

SECTION C: Strategies

3. What strategies would you like to see adopted to support delivery of VTE programmes in Delta State, Nigeria?

.....
.....

4. What are the most important factors impacting the quality of VTE programmes?

.....
.....

5. Who should be involved in the curriculum planning and review?

.....
.....

Demographic variables:

Name of institution/industry.....

Sex: Male (); Female ()

Status: Trainer/educator (); Student/trainee (); Employer/company representative ()

Appendix viii-Ethical approval.



3rd July 2018

Cambridge & Chelmsford

Chelmsford Campus

Bishop Hall Lane Tel: 01245-493131

Cletus Onwenonye

Dear Cletus

Principal Investigator	Cletus Onwenonye
DREP Number	FHSCE-DREP-17-228
Project Title	Evaluation of the Factors Affecting the Success of Vocational Technical Education Programmes in Higher Institutions in Delta State, Nigeria

I am pleased to inform you that your ethics application has been approved by the Departmental Research Ethics Panel (DREP) under the terms of Anglia Ruskin University's Research Ethics Policy (Dated 8 September 2016, Version 1.7). Approval by DREP is subject to ratification by the FREP.

Ethical approval is given for 3 years from 3rd July 2018. If your research will extend beyond this period, it is your responsibility to apply for an extension before your approval expires.

Please see final comments from the Chair:

Please make the final few edits to the PIS before handing out to participants: please make it clear that you are referring to withdrawal of data after taking part when you specify the one month time period, and please add to section B point 10 about the flash drive being password protected and stored in a locked drawer.

It is your responsibility to ensure that you comply with Anglia Ruskin University's Research Ethics Policy and the Code of Practice for Applying for Ethical Approval at Anglia Ruskin University available at www.anglia.ac.uk/researchethics including the following.

- The procedure for submitting substantial amendments to the committee, should there be any changes to your research. You cannot implement these amendments until you have received approval from DREP for them.
- The procedure for reporting accidents, adverse events and incidents.
- The General Data Protection Requirement and Data Protection Act (2018).
- Any other legislation relevant to your research. You must also ensure that you are aware of any emerging legislation relating to your research and make any changes to your study (which you will need to obtain ethical approval for) to comply with this.
- Obtaining any further ethical approval required from the organisation or country (if not carrying out research in the UK) where you will be carrying the research out. This includes other Higher Education Institutions if you intend to carry out any research involving their students, staff, or

premises. Please ensure that you send the DREP copies of this documentation if required, prior to starting your research.

- Any laws of the country where you are carrying the research and obtaining any other approvals or permissions that are required.
- Any professional codes of conduct relating to research or requirements from your funding body (please note that for externally funded research, where the funding has been obtained via Anglia Ruskin University, a Project Risk Assessment must have been carried out prior to starting the research).
- Completing a Risk Assessment (Health and Safety) if required and updating this annually or if any aspects of your study change which affect this.
- Notifying the DREP Secretary when your study has ended.

Please also note that your research may be subject to monitoring.

Should you have any queries, please do not hesitate to contact me. May I wish you the best of luck with your research.

Yours sincerely,



Dr. Ceri Wilson (Vice Chair)

For FHSCE Research Ethics Panel (DREP)

T: 0845 196 4189

E: ceri.wilson@anglia.ac.uk

Copy to: Simon Pratt-Adams

Appendix ix-Interview transcript.

1. Strengths of VTE

<Internals\\Interviews\\EMPLOYERS 2> - § 1 reference coded [1.14% Coverage]

Reference 1 - 1.14% Coverage

They dwell more in theories

<Internals\\Interviews\\EMPLOYERS 3> - § 1 reference coded [1.07% Coverage]

Reference 1 - 1.07% Coverage

They have more theoretical knowledge

<Internals\\Interviews\\EMPLOYERS 5> - § 1 reference coded [2.64% Coverage]

Reference 1 - 2.64% Coverage

the students have the opportunity to learn the theoretical aspect of their area of specialization.

<Internals\\Interviews\\TRAINEES 3> - § 1 reference coded [2.09% Coverage]

Reference 1 - 2.09% Coverage

The strength is that the institution is good in theory.

<Internals\\Interviews\\TRAINEES 4> - § 1 reference coded [0.88% Coverage]

Reference 1 - 0.88% Coverage

The institution is good in theory.

<Internals\\Interviews\\TRAINER 1> - § 1 reference coded [2.40% Coverage]

Reference 1 - 2.40% Coverage

The strength of vocational institutions in delta state is that they are stronger in theory

<Internals\\Interviews\\TRAINER 2> - § 2 references coded [3.69% Coverage]

Reference 1 - 2.60% Coverage

the institutions have the personnel and minimum resources required for training the students.

Reference 2 - 1.09% Coverage

the students are willing to be trained.

<Internals\\Interviews\\TRAINER 3> - § 1 reference coded [2.02% Coverage]

Reference 1 - 2.02% Coverage

The programme has the capacity to make the participants to be self-reliance

<Internals\Interviews\TRAINER 4> - § 3 references coded [3.72% Coverage]

Reference 1 - 0.96% Coverage

The graduates are self-reliant

Reference 2 - 1.22% Coverage

the manpower of the institutions is ok

Reference 3 - 1.54% Coverage

the institutions impact skills required for work

<Internals\Interviews\TRAINER 7> - § 1 reference coded [3.02% Coverage]

Reference 1 - 3.02% Coverage

The teachers are making serious effort to use the little available resources to impact on the students.

<Internals\Interviews\TRAINER 8> - § 1 reference coded [2.16% Coverage]

Reference 1 - 2.16% Coverage

The vocational institutions are strong in terms of delivery of theoretical knowledge

2. Constraints to effective Implementation VTE

<Internals\Interviews\EMPLOYERS 1> - § 4 references coded [8.84% Coverage]

Reference 1 - 2.74% Coverage

facilities for effective practical session are either not available or they are obsolete

Reference 2 - 2.40% Coverage

the instructors need retraining to be effective in practical lessons delivery

Reference 3 - 1.40% Coverage

there are no facilities for training students

Reference 4 - 2.30% Coverage

the teachers themselves are not practical oriented in the areas they teach

<Internals\Interviews\EMPLOYERS 2> - § 3 references coded [3.50% Coverage]

Reference 1 - 0.72% Coverage

lack of equipment

Reference 2 - 1.69% Coverage

obsolete machines and inferior materials

Reference 3 - 1.10% Coverage

Lack of qualified teachers

<Internals\Interviews\EMPLOYERS 3> - § 2 references coded [5.84% Coverage]

Reference 1 - 3.76% Coverage

they have a strong weakness in terms of leadership, personal relationship, lack of work skills and practical skills orientation

Reference 2 - 2.07% Coverage

Absence of tools, materials and lack industry-institution relationship

<Internals\Interviews\EMPLOYERS 4> - § 2 references coded [12.19% Coverage]

Reference 1 - 3.34% Coverage

they do not have the technical know-how to carry out the actual task required on the job

Reference 2 - 8.85% Coverage

We do not have competent and enough trainers to train the students; the issue of power is a major problem. Lack of raw materials to learn with, the teaching aid is not adequate. The get rich quick syndrome is another major challenge.

<Internals\Interviews\EMPLOYERS 5> - § 6 references coded [9.09% Coverage]

Reference 1 - 1.78% Coverage

they have not mastered the practical knowledge required on the job

Reference 2 - 0.32% Coverage

Poor funding

Reference 3 - 1.64% Coverage

lack of equipment for teaching the practical to the teachers,

Reference 4 - 1.21% Coverage

many of the teachers are not properly trained

Reference 5 - 1.80% Coverage

the synergy between the institution and the industries are not they

Reference 6 - 2.34% Coverage

the curriculum does not reflect what the students are supposed to meet after graduation

<Internals\Interviews\TRAINEES 1> - § 1 reference coded [4.80% Coverage]

Reference 1 - 4.80% Coverage

inadequate modern facilities to carryout emerging and current training in our area of specialization

<Internals\Interviews\TRAINEES 2> - § 1 reference coded [2.90% Coverage]

Reference 1 - 2.90% Coverage

facilities are really not there, and a good number of the trainers still have to be trained

<Internals\Interviews\TRAINEES 3> - § 1 reference coded [2.56% Coverage]

Reference 1 - 2.56% Coverage

There is no adequate power supply to facilitate the practical training.

<Internals\Interviews\TRAINEES 4> - § 2 references coded [6.30% Coverage]

Reference 1 - 2.00% Coverage

funding is limited since the students contribute the money for their training

Reference 2 - 4.30% Coverage

They spend more time teaching and emphasizing theoretical aspect of the course contents and examination questions are also drawn from theoretical part of the content.

<Internals\Interviews\TRAINER 1> - § 1 reference coded [3.51% Coverage]

Reference 1 - 3.51% Coverage

weaker in practical. It is so because there are inadequate tools, equipment machines and consumable materials for practical exercises

<Internals\Interviews\TRAINER 10> - § 1 reference coded [0.76% Coverage]

Reference 1 - 0.76% Coverage

There is not enough fund.

<Internals\Interviews\TRAINER 2> - § 2 references coded [4.44% Coverage]

Reference 1 - 1.98% Coverage

one is unavailability of resources and facilities to train the students

Reference 2 - 2.46% Coverage

there are no modern equipment's that will be at par with the current global environment.

<Internals\Interviews\TRAINER 3> - § 6 references coded [9.12% Coverage]

Reference 1 - 1.19% Coverage

the training manpower is not adequate

Reference 2 - 0.84% Coverage

the facilities are not adequate

Reference 3 - 3.35% Coverage

there is a mismatch between the industries and the institutions in areas of equipment's, skills manpower and facilities used

Reference 4 - 0.40% Coverage

lack of funding

Reference 5 - 0.73% Coverage

lack of maintenance culture

Reference 6 - 2.62% Coverage

Inadequate trainees, low personal image, over-emphases on certification, gender inequality.

<Internals\Interviews\TRAINER 4> - § 1 reference coded [2.12% Coverage]

Reference 1 - 2.12% Coverage

The machines are becoming obsolete; the staff strength is very low

<Internals\Interviews\TRAINER 5> - § 7 references coded [15.22% Coverage]

Reference 1 - 3.24% Coverage

The teaching environment is not enhanced, there is a mismatch in terms of manpower because some of the lecturers are not qualified,

Reference 2 - 3.04% Coverage

the curriculum is overloaded with theoretical content instead of contents that must promote the use of hand and the brain

Reference 3 - 0.84% Coverage

consumable materials are not there

Reference 4 - 1.90% Coverage

negative mindset of parents and the society on vocational education programme

Reference 5 - 1.56% Coverage

funding of vocational education in the state is not good enough

Reference 6 - 1.68% Coverage

the training and retraining of vocational education teachers are poor

Reference 7 - 2.97% Coverage

the management of vocational education is not in the hand of vocational educators, poor remuneration is a serious issue

<Internals\\Interviews\\TRAINER 6> - § 1 reference coded [4.22% Coverage]

Reference 1 - 4.22% Coverage

The level of operation is low because of lack of equipment and as such the level of assimilation of students is not good enough

<Internals\\Interviews\\TRAINER 7> - § 1 reference coded [3.46% Coverage]

Reference 1 - 3.46% Coverage

the programme is not moving as expected because the right tools, machines and facilities needed is not available.

<Internals\\Interviews\\TRAINER 8> - § 1 reference coded [1.59% Coverage]

Reference 1 - 1.59% Coverage

are weak in terms of practical skills delivery and acquisition

<Internals\\Interviews\\TRAINER 9> - § 1 reference coded [2.11% Coverage]

Reference 1 - 2.11% Coverage

Lack of facilities to teach is the major weakness.

3. Industry and VTE facilities

<Internals\\Interviews\\TRAINEES 1> - § 1 reference coded [5.23% Coverage]

Reference 1 - 5.23% Coverage

I can say that at the industries we have modern equipment, while the institution does not have the same kind.

<Internals\\Interviews\\TRAINEES 3> - § 1 reference coded [4.61% Coverage]

Reference 1 - 4.61% Coverage

The available machines in this institution are obsolete when compare to the industries and practical materials are not adequate.

<Internals\\Interviews\\TRAINEES 4> - § 1 reference coded [3.76% Coverage]

Reference 1 - 3.76% Coverage

Most of the equipment used in schools is not in any way comparable with what you find in the industries in terms of efficiency and sophistication

<Internals\\Interviews\\TRAINER 1> - § 1 reference coded [5.33% Coverage]

Reference 1 - 5.33% Coverage

Presently there is sharp difference between what we have in the schools and the industries because the facilities and machines used in schools are inadequate when compared to the ones in the industries.

<Internals\\Interviews\\TRAINER 10> - § 1 reference coded [3.12% Coverage]

Reference 1 - 3.12% Coverage

The equipment available in the institutions is ok but not like what is obtainable in the industries

<Internals\\Interviews\\TRAINER 2> - § 1 reference coded [7.34% Coverage]

Reference 1 - 7.34% Coverage

Obsolete equipment and their working capacity are very low compare to what the students are likely to meet in the industries. Therefore, what is available in the vocational technical higher institutions cannot be used to compare what is obtained in the industries.

<Internals\\Interviews\\TRAINER 3> - § 1 reference coded [6.99% Coverage]

Reference 1 - 6.99% Coverage

There is a mismatch between the industries and the institutions in areas of equipment, skills manpower and facilities used. the mismatch is in technology. What is in current use in the industry is not yet available in the vocational institutions,

<Internals\\Interviews\\TRAINER 4> - § 1 reference coded [3.34% Coverage]

Reference 1 - 3.34% Coverage

presently, the institutions have adequate machines but not the type that is required at the current time

<Internals\\Interviews\\TRAINER 5> - § 1 reference coded [3.90% Coverage]

Reference 1 - 3.90% Coverage

Based on my observation during the accreditation and industrial attachment supervision, I will say that most of the machines in the institutions are obsolete.

<Internals\Interviews\TRAINER 6> - § 1 reference coded [2.79% Coverage]

Reference 1 - 2.79% Coverage

The industries have far more sophisticated equipment compared to the institutions.

<Internals\Interviews\TRAINER 7> - § 1 reference coded [2.73% Coverage]

Reference 1 - 2.73% Coverage

The industries have sophisticated machines and have better equipment than the institutions.

<Internals\Interviews\TRAINER 9> - § 1 reference coded [3.61% Coverage]

Reference 1 - 3.61% Coverage

The equipment available in the industries are more advanced than the once we have here.

4. Industries level of satisfaction of VTE graduates

<Internals\Interviews\EMPLOYERS 2> - § 1 reference coded [7.68% Coverage]

Reference 1 - 7.68% Coverage

The level of satisfaction is very low because of the disparity in the type of equipment and materials. The industry is often better equipped than the vocational institution workshops

<Internals\Interviews\EMPLOYERS 4> - § 1 reference coded [3.34% Coverage]

Reference 1 - 3.34% Coverage

We train them to our own satisfaction because the knowledge base they have is not enough

<Internals\Interviews\EMPLOYERS 5> - § 1 reference coded [7.13% Coverage]

Reference 1 - 7.13% Coverage

The graduates are not the types of graduates the industries will readily accept because there is really a serious gap in terms of practical performance between what is required of the graduates in terms of the number of years spent and the level of skills acquired.

5. Role of Industries in VTE

<Internals\Interviews\EMPLOYERS 1> - § 2 references coded [4.30% Coverage]

Reference 1 - 2.33% Coverage

The industries should be the pace setter for the institutions to look up to

Reference 2 - 1.96% Coverage

The industries should also assist in the retraining of teachers

<Internals\Interviews\EMPLOYERS 2> - § 1 reference coded [5.23% Coverage]

Reference 1 - 5.23% Coverage

The industries should assist the students by exposing them to the use of some modern equipment during industrial attachment.

<Internals\Interviews\EMPLOYERS 3> - § 1 reference coded [5.07% Coverage]

Reference 1 - 5.07% Coverage

The industries should complement the schools through partnership by assisting in the training of the students through industrial attachment for better practical knowledge.

<Internals\Interviews\EMPLOYERS 4> - § 1 reference coded [5.39% Coverage]

Reference 1 - 5.39% Coverage

The industries should be allowing the students to come for industrial attachment to enable them to learn the task and the work skills involve.

<Internals\Interviews\EMPLOYERS 5> - § 2 references coded [7.26% Coverage]

Reference 1 - 4.76% Coverage

The industries should show some commitment by giving students the opportunity to come for industrial training, the industries should be part of the funding of these institutions

Reference 2 - 2.50% Coverage

the industries should work with the institution to ensure that the practical period is enough

<Internals\Interviews\TRAINER 1> - § 1 reference coded [5.35% Coverage]

Reference 1 - 5.35% Coverage

they are supposed to partner with the institutions in terms of meeting the needs of learners, through the donation of machines and other modern equipment's to improve the training and learning purposes.

<Internals\Interviews\TRAINER 10> - § 1 reference coded [3.84% Coverage]

Reference 1 - 3.84% Coverage

The industries should partner with the institutions so that the students can be accepted for industrial attachment at will

<Internals\Interviews\TRAINER 2> - § 1 reference coded [4.44% Coverage]

Reference 1 - 4.44% Coverage

The industries should try and bring in their expertise to the Vocational technical higher institutions through partnership for training for skills improvement.

<Internals\Interviews\TRAINER 3> - § 1 reference coded [6.45% Coverage]

Reference 1 - 6.45% Coverage

The industries should visit the institutions to see what is happening to have an on the spot evaluation, also encourage the institutions to allow the students to visit the industries for practical's and career orientation programmes.

<Internals\Interviews\TRAINER 4> - § 1 reference coded [5.07% Coverage]

Reference 1 - 5.07% Coverage

The role of the industries is very vital, that is why the institutions encourage the students to participate in students' industrial work experience programme

<Internals\Interviews\TRAINER 5> - § 2 references coded [6.99% Coverage]

Reference 1 - 1.85% Coverage

The industries should fill this gap again by assisting in training student.

Reference 2 - 5.14% Coverage

there should be a law in the state that stipulates that all industries doing business in the state must partner with vocational institution in a way to improve the quality of graduates from such institutions.

<Internals\Interviews\TRAINER 9> - § 1 reference coded [5.48% Coverage]

Reference 1 - 5.48% Coverage

The industries should help to recruit students on industrial attachment. by opening their doors and accept trainees send to them for IT

6. VTE and Industry Synergy

<Internals\Interviews\TRAINEES 1> - § 1 reference coded [3.98% Coverage]

Reference 1 - 3.98% Coverage

The industries need to assist the institutions by providing modern facilities.

<Internals\Interviews\TRAINEES 2> - § 2 references coded [7.15% Coverage]

Reference 1 - 3.90% Coverage

The partnership between the industries and the institution is friendly because they accept students on industrial attachment.

Reference 2 - 3.25% Coverage

The level of cooperation between staff i.e. trainers and other technical staff in the workshop is very low

<Internals\Interviews\TRAINEES 3> - § 1 reference coded [4.54% Coverage]

Reference 1 - 4.54% Coverage

The industries help to expose us to those aspects of practical training with machines that cannot be found in our institutions

<Internals\Interviews\TRAINEES 4> - § 1 reference coded [3.14% Coverage]

Reference 1 - 3.14% Coverage

The synergy is very poor. For instance, it is not all the industries that welcome the students for industrial attachment.

<Internals\Interviews\TRAINER 2> - § 1 reference coded [4.55% Coverage]

Reference 1 - 4.55% Coverage

There is still more room for the industries to synergize with the institutions in joining hand together to train the trainees for the betterment of the industries.

<Internals\Interviews\TRAINER 3> - § 2 references coded [2.86% Coverage]

Reference 1 - 1.97% Coverage

There is no collaboration between the labour market and the institutions.

Reference 2 - 0.89% Coverage

The SIWES programme is not enough

<Internals\Interviews\TRAINER 4> - § 1 reference coded [3.50% Coverage]

Reference 1 - 3.50% Coverage

The level of synergy is very high because they accept the students on industrial attachment for more training

<Internals\Interviews\TRAINER 5> - § 1 reference coded [5.14% Coverage]

Reference 1 - 5.14% Coverage

The industries are trying their best so there is a synergy between the industries and the institutions. But the synergy should be strengthened because the same industries does not employ them after graduation

<Internals\\Interviews\\TRAINER 7> - § 1 reference coded [5.60% Coverage]

Reference 1 - 5.60% Coverage

The level of partnership is fair, because some industries still find it difficult to accept students on industrial attachment to train them since they will not work for them after graduation.

<Internals\\Interviews\\TRAINER 8> - § 1 reference coded [3.06% Coverage]

Reference 1 - 3.06% Coverage

The synergy is very poor because those industries do not care to accept the technical students for industrial training.

<Internals\\Interviews\\TRAINER 9> - § 1 reference coded [8.25% Coverage]

Reference 1 - 8.25% Coverage

The level of cooperation is fair but not as expected, because many of the industries do not accept students on industrial attachment and when they do, they collect a huge some as a fee for the training.

7. VTE Status in Delta State

<Internals\\Interviews\\EMPLOYERS 1> - § 1 reference coded [1.31% Coverage]

Reference 1 - 1.31% Coverage

They should create more room for practical

<Internals\\Interviews\\EMPLOYERS 2> - § 1 reference coded [2.11% Coverage]

Reference 1 - 2.11% Coverage

They teach only theory with little or no practical

<Internals\\Interviews\\EMPLOYERS 3> - § 1 reference coded [1.60% Coverage]

Reference 1 - 1.60% Coverage

They seem not to be achieving the aim of the programme

<Internals\\Interviews\\EMPLOYERS 4> - § 1 reference coded [2.51% Coverage]

Reference 1 - 2.51% Coverage

The institutions are producing graduates with no practical skills.

<Internals\Interviews\EMPLOYERS 5> - § 1 reference coded [2.23% Coverage]

Reference 1 - 2.23% Coverage

the heads of the technical institutions are not qualified to man these institutions

<Internals\Interviews\TRAINEES 1> - § 1 reference coded [1.29% Coverage]

Reference 1 - 1.29% Coverage

the training is not enough

<Internals\Interviews\TRAINEES 2> - § 1 reference coded [7.96% Coverage]

Reference 1 - 7.96% Coverage

The programme is not meeting the need fully, for instance, the students are left to put more effort to succeed. The students are left to put more effort on their own by going to vocational centres to acquired requisite skill to fit into the world of works

<Internals\Interviews\TRAINEES 3> - § 2 references coded [8.29% Coverage]

Reference 1 - 3.39% Coverage

adequate practical is not given, and it will not help us to operate well in the labour market.

Reference 2 - 4.90% Coverage

What are needed includes: enough consumables for practical; more time for practical; provision of modern equipment, tools, and machines

<Internals\Interviews\TRAINEES 4> - § 1 reference coded [6.17% Coverage]

Reference 1 - 6.17% Coverage

The training in terms of time schedule for workshop practices is limited, because the time used for general courses can be used for practical training to further expose the students into real life practical experience for the world of work

<Internals\Interviews\TRAINER 1> - § 1 reference coded [4.17% Coverage]

Reference 1 - 4.17% Coverage

Vocational education is in a sorry state in Delta state due to poor funding, obsolete tools machine and equipment as well as faulty assessment of learners

<Internals\Interviews\TRAINER 10> - § 1 reference coded [4.60% Coverage]

Reference 1 - 4.60% Coverage

The programme gives the foundation knowledge of the skills the students are learning. But more is required to meet the demand of the labour market

<Internals\Interviews\TRAINER 2> - § 1 reference coded [6.90% Coverage]

Reference 1 - 6.90% Coverage

The institutions have quality manpower, hence if they exposed to modern equipment, I think things can change for the better. The vocational higher institutions in Delta State in terms of meeting the demand of the labour market are on the average.

<Internals\Interviews\TRAINER 4> - § 1 reference coded [5.10% Coverage]

Reference 1 - 5.10% Coverage

The students have not possessed the required skills that will enable them to be self-reliant because some of them are still looking for jobs after graduation.

<Internals\Interviews\TRAINER 5> - § 1 reference coded [2.59% Coverage]

Reference 1 - 2.59% Coverage

we teach more of theories than practical because of lack consumables and unfavourable working environment

<Internals\Interviews\TRAINER 7> - § 1 reference coded [2.26% Coverage]

Reference 1 - 2.26% Coverage

The institutions are trying in terms of practical's but not to a large extent

<Internals\Interviews\TRAINER 9> - § 1 reference coded [13.32% Coverage]

Reference 1 - 13.32% Coverage

The demand is very high in terms of modern ways of doing things; it is the duty of the institutions to strive to meet up with these demands by training students with the same type of equipment as can be seen in the labour market. It not happening because of the vocational institutions is not the exact replica of the industry.

8. Improving VTE delivery

<Internals\Interviews\EMPLOYERS 1> - § 5 references coded [10.74% Coverage]

Reference 1 - 1.65% Coverage

the industries should assist in training the students

Reference 2 - 2.83% Coverage

the government should open a training centre where graduates will be trained free of charge

Reference 3 - 1.59% Coverage

Government should build standard vocational schools

Reference 4 - 1.53% Coverage

more equipment should be procured for the schools

Reference 5 - 3.14% Coverage

The funds could be obtained from vocational education tax and subvention from governments and donors.

<Internals\Interviews\EMPLOYERS 2> - § 1 reference coded [3.12% Coverage]

Reference 1 - 3.12% Coverage

They have to get proper machines, quality materials and qualified teachers

<Internals\Interviews\EMPLOYERS 3> - § 1 reference coded [5.39% Coverage]

Reference 1 - 5.39% Coverage

There should be industry-school relationship; the teachers should interact with the industries to learn the state of the art so that they will incorporate these arts in the students.

<Internals\Interviews\EMPLOYERS 4> - § 4 references coded [14.43% Coverage]

Reference 1 - 3.19% Coverage

They should be re-training their teachers so that they will learn the new techniques

Reference 2 - 2.05% Coverage

they should try to solve the problem of power shortage

Reference 3 - 4.33% Coverage

they should employ competent personnel and enough material should be provided to enable the students to practice.

Reference 4 - 4.86% Coverage

they should improve on the types of facilities, workshops, and learning environment to motivate the students to want to learn.

<Internals\Interviews\EMPLOYERS 5> - § 4 references coded [8.21% Coverage]

Reference 1 - 2.61% Coverage

The institutions should re-plan their curriculum to reflect what is obtainable outside the school

Reference 2 - 1.40% Coverage

fund should be made available to equip the workshops

Reference 3 - 1.78% Coverage

competent teachers should be employed and should be paid very well

Reference 4 - 2.42% Coverage

the teachers should be re-trained to meet the contemporary challenges of the current time.

<Internals\Interviews\TRAINEES 1> - § 5 references coded [13.86% Coverage]

Reference 1 - 2.69% Coverage

The trainers should be re-trained with modern equipment.

Reference 2 - 2.54% Coverage

More time given for practical sessions in our schools

Reference 3 - 3.60% Coverage

Curriculum should be planned in collaboration with relevant industries

Reference 4 - 2.45% Coverage

Government should build standard vocational schools

Reference 5 - 2.59% Coverage

more equipment should be procured for the schools.

<Internals\Interviews\TRAINEES 2> - § 3 references coded [8.90% Coverage]

Reference 1 - 0.91% Coverage

Facilities should be provided

Reference 2 - 2.97% Coverage

practical work should be done regularly to enable us practice very well what we were taught.

Reference 3 - 5.02% Coverage

More focus should be given practical training through the provision of modern facilities, re-training of trainers so that when we graduate, we can be self-reliant

<Internals\Interviews\TRAINEES 3> - § 3 references coded [9.91% Coverage]

Reference 1 - 4.61% Coverage

More practical with modern facilities should be employed to enable the students to be more educated in terms of practical skills

Reference 2 - 1.19% Coverage

More equipment should be employed

Reference 3 - 4.11% Coverage

the level of vocational education should be made to be at par with other disciplines like Law and medical sciences

<Internals\Interviews\TRAINEES 4> - § 1 reference coded [5.81% Coverage]

Reference 1 - 5.81% Coverage

Government should give more support in terms of funding and provide the necessary equipment such as machines, tools and standard workshop with uninterrupted power supply and room should be opened for more staff training

<Internals\Interviews\TRAINER 1> - § 3 references coded [8.18% Coverage]

Reference 1 - 4.48% Coverage

The individuals, NGOs and industries should help and support the institutions in terms of training of the student through the donations of modern machines and equipment's

Reference 2 - 2.19% Coverage

the government should increase the funding of the vocational technical institutions

Reference 3 - 1.50% Coverage

practical materials should be made available for training

<Internals\Interviews\TRAINER 10> - § 5 references coded [15.77% Coverage]

Reference 1 - 1.01% Coverage

Funding should be made available

Reference 2 - 2.39% Coverage

they should sensitize the students on the importance of vocational education

Reference 3 - 5.38% Coverage

money should be made available for the procurement of the needed consumable materials, tools, equipment, and machines for effective implementation of vocational education.

Reference 4 - 1.16% Coverage

the teachers should be paid very well

Reference 5 - 5.82% Coverage

provision of all necessary equipment and facilities that will make teaching and learning easy and making both learner and instructor comfortable in the teaching and learning environment

<Internals\Interviews\TRAINER 2> - § 5 references coded [10.30% Coverage]

Reference 1 - 1.40% Coverage

More awareness should be created among the youths.

Reference 2 - 2.40% Coverage

enough funding for the acquisition of facilities, equipment, and materials for training

Reference 3 - 1.45% Coverage

both the trainees and trainers need to be motivated

Reference 4 - 1.90% Coverage

the welfare of both the trainers and trainees should be looked into,

Reference 5 - 3.15% Coverage

there should be regular power supply for the students to power the machines to practice what they have learnt.

<Internals\Interviews\TRAINER 3> - § 3 references coded [7.96% Coverage]

Reference 1 - 0.86% Coverage

Funding should be made available

Reference 2 - 2.05% Coverage

they should sensitize the students on the importance of vocational education

Reference 3 - 5.04% Coverage

The learning environments should be friendly, should be accommodating, hazard free, and should be devoid of various lacks such as infrastructure, facilities, human capital, and electricity

<Internals\Interviews\TRAINER 4> - § 3 references coded [11.65% Coverage]

Reference 1 - 3.82% Coverage

Adequate funding of vocational education because UNESCO benchmark of the total budget of 13% is not actually being met

Reference 2 - 2.60% Coverage

the teacher should be remunerated to encourage them, and re-training of teachers.

Reference 3 - 5.23% Coverage

the vocational education should be separated from the general education programme so that the management of technical education will be given adequate attention.

<Internals\Interviews\TRAINER 5> - § 7 references coded [17.54% Coverage]

Reference 1 - 1.90% Coverage

qualified teachers should be employed to teach vocational education programme

Reference 2 - 2.57% Coverage

modern equipment that matches the current trends should be supplied and teachers trained on how to use them

Reference 3 - 1.46% Coverage

consumables should be made available for practical training

Reference 4 - 1.90% Coverage

a board of technical education should be set and managed by technical experts

Reference 5 - 3.26% Coverage

Instead of using physics teachers give the technical education graduates automatic employment to teach technical education courses.

Reference 6 - 3.78% Coverage

The government should provide a good working environment such as a good and well-equipped workshop, re-orient the introductory technology of those days,

Reference 7 - 2.67% Coverage

a state of emergency should be delayed and bring in experts to draw up a strategic technical education plan.

<Internals\Interviews\TRAINER 7> - § 3 references coded [5.25% Coverage]

Reference 1 - 2.32% Coverage

The industries and some philanthropist should help to fund vocational education

Reference 2 - 0.97% Coverage

The students should be encouraged

Reference 3 - 1.96% Coverage

machines and materials should be provided for training the students

<Internals\Interviews\TRAINER 8> - § 1 reference coded [2.52% Coverage]

Reference 1 - 2.52% Coverage

government should come up with policies that will make technical education to be better in Nigeria

<Internals\Interviews\TRAINER 9> - § 1 reference coded [2.23% Coverage]

Reference 1 - 2.23% Coverage

Provision of modern and emerging equipment for training

9. Curriculum Planning and Review

<Internals\Interviews\EMPLOYERS 3> - § 1 reference coded [3.53% Coverage]

Reference 1 - 3.53% Coverage

What can be done to improve the situation VET in delta state is a curriculum review that will involve all stakeholders.

<Internals\Interviews\EMPLOYERS 5> - § 2 references coded [4.95% Coverage]

Reference 1 - 2.34% Coverage

the curriculum does not reflect what the students are supposed to meet after graduation

Reference 2 - 2.61% Coverage

The institutions should re-plan their curriculum to reflect what is obtainable outside the school

<Internals\Interviews\TRAINEES 1> - § 1 reference coded [3.60% Coverage]

Reference 1 - 3.60% Coverage

Curriculum should be planned in collaboration with relevant industries.

<Internals\Interviews\TRAINER 5> - § 2 references coded [4.72% Coverage]

Reference 1 - 3.04% Coverage

the curriculum is overloaded with theoretical content instead of contents that has to promote the use of hand and the brain.

Reference 2 - 1.68% Coverage

the curriculum content should be more of practical instead of theory.

Appendix x-Published Publications (Abstracts) and Book-VTE in Nigeria.

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AN APPRAISAL OF THE DEVELOPMENT AND FUNCTIONING OF VOCATIONAL EDUCATION AND TRAINING IN NIGERIA

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ABSTRACT: *Technical Vocational Education and Training (TVET) programmes in Nigeria is yet to be understood by the members of the society and that accounts for their negative attitude of relegating it to the background despite its potentials and undeniable evidence of its' products and services. The programmes are in different categories and levels but are characterized by the practical components which cut across all the different levels. The historical research method was adopted for the study using primary and secondary data. The study reveals that technical vocational education and training programmes have been in vogue from the pre-colonial era to date. It was the main training programmes available before the advent of colonialism and introduction of western education in Nigeria. TVET programmes in Nigeria is not meeting the needs of the society and the paper advanced what should be done to bridge the need gap as the way forward.*

KEYWORDS: TVET, skills, industries, trainers, trainees

DIMENSIONAL APPROACHES TO THE CHALLENGES OF VOCATIONAL TECHNICAL EDUCATION IN NIGERIA.

Onwenonye, C.

ABSTRACT

The paper is advocating for dimensional approaches to the challenges of vocational technical education programme in Nigeria. It ex-ray the definition of vocational technical education, the philosophy and the national policy on vocational technical education, societal attitudes towards vocational technical education, challenges and prospects of vocational technical education and found that the programme is not meeting the needs of the society. It identified the problems to have emanated from the government, society, parents, teachers and learners. It summarized and suggested that there should be a positive change in attitude, purposeful investment and full commitment to the various aspects of the programme and the use of a new approach of triangulation method that will involve the industries, trainers/educators and trainees in its planning to move the country to the next level of technological advancement.

Key Words: challenges, triangulation, societal attitude, vocational technical education, technology, multifarious, suicidal and change.



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Vocational Technical Education in Nigeria

Journey Thus Far and the Way Forward

