

**KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY,
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**Factors for Ensuring Quality Assurance of Technical and Vocational Education (TVE)
Delivery in Ghana**

By

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(BSc. Construction Technology and Management)

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MASTER OF SCIENCE

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DECLARATION

I hereby declare that this submission is my own work except for work and that, to the best of my knowledge, it contains no material previously published by another person, nor material which has been accepted for award of any other degree of the Kwame Nkrumah University of Science and Technology, Kumasi or any other except where due acknowledgement has been duly made in the thesis.

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ABSTRACT

Technical Vocational Education is vital in enhancing socio-economic growth as well as providing job opportunities and self-reliance. In realizing these objectives, quality assurance is a watch word. The study aimed at exploring factors for ensuring Quality Assurance in Technical Vocational Education (TVE) delivering in Ghana. The study discussed various quality assurance factors, challenges and possible practices for ensuring quality assurance in TVE delivery. In order to achieve the aim and the objective, the study used questionnaire survey in gathering data. The population of the study was made up of the teaching and supporting staff of the National Vocational Training Institute in Accra. The study adopted Stratified and purposive random sampling techniques to come out with a sample size of (151) out of which (130) questionnaires returned for the analysis. A set of (10) variable Factors; and Challenges were given to the respondents to answer using a five-point Likert scale of 1- Strongly disagreed to 5- Strongly agreed. Also a set of (11) Practice variables were ranked using the Likert scale of 1=Poor to 5=Excellent. Quantitative method was adopted. The findings were presented using Mean and Relative Important Index (RII) scores supported with in-depth descriptions. The findings were; Poor environment and inadequate infrastructure for TVE institutions, inadequate teaching / instructional materials, Inadequate Findings, Uses of obsolete tools, equipment and instruments for training as major challenges. The study recommended. The study recommended; Quality Assurance policy and Framework, Good Environment and adequate infrastructure, Modern tools and equipment, Instructional materials, adequate funding, Regular and Effective supervision, and monitoring of TVE programmes as key to Quality Assurance of TVE Delivery in Ghana.

***Keywords:* Technical and Vocational Education, Quality Assurance, Ghana.**

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DEDICATION

This research work is first and foremost dedicated to the Almighty God for the mercies and favours He shown me throughout the entire course duration. Notwithstanding the numerous absents from Church activities. I also dedicate it to my wife, Vida Darteh and my three lovely daughters, Ernestina Nkansah Darteh, Mavis Seiwaa Darteh and Jennifer Pokua Darteh for their supports and understanding throughout the course which many at times denial them from seeing me around as a father.

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LIST OF ABBREVIATIONS

CMMTI	Construction Machinery Mechanic Training Institute
COTVET	Council of Technical Vocational Education and Training
GES	Ghana Education Service
GRATIS	Ghana Regional Apporate Technology Industrial Services
HND	Higher National Diploma
ILO	International Labour Organization
ITTU	Intermediate Technology Transfer Unit
KCTI	Kanda Career Training Institute
LI	Legislative Instruments
NAB	National Accreditation Board
NCCTI	New Century Career Training Institute
NCVER	National Centre for Vocational Education Research
NVTI	National Vocational Training Institute
OIC	Opportunity Industrialization Centre
PDCA	Plan - Do - Checking - Act
PMBOK	Project Management Body Of Knowledge
PNDC	Provisional National Defence Council
PTI	Pilot Training Institute
QA	Quality Assurance
RII	Relative Importance Index
TESDA	Technical Education and Skill Development Authority
TIMVTI	Tema Industrial Mission Vocational Training Institute
TVE	Technical Vocational Education
TVET	Technical Vocational Education and Training
UNDP/SF	United Nations Development Programme Special Fund
UNESCO	United Nations Educational, Scientific and Cultural Organization

CHAPTER ONE

INTRODUCTION

1.1 BACKGROUND OF THE STUDY

Quality Assurance (QA) and Technical Vocational Education (TVE) are dual concepts with regards to specialized skill-focused education (Akhuemonkhan *et al* (2014). However, ineffective or absence of quality assurance (QA) has been identified as a canker which will defeat realization of goals of TVE (Akhuemonkhan *et al* (2014). Technical and Vocational Education (TVE) is undoubtedly a major key contributor of training in acquiring skills and labour force needed in attaining the development vision of a particular nation. It complements the effort of existing systems of education in providing the technologies and related sciences, acquisition of practical skills, attitudes, understanding and knowledge with regards to occupations in numerous areas of the economic and social life (UNESCO, 2002). The main cardinal objective of TVE that goes around the socio-economic, industrial and technological objective is that, it leads to improvement of standard of living for a nation's citizens as well as economic stability, industrial harmony and technological advancement (Idialu, 2013). Furtherance to the above, it plays economic role of providing qualified manpower base for a nation by preparing individuals towards change of technology (Idialu, 2013). TVE therefore, gears towards acquisition of knowledge and skills which brings about various employment opportunities, produces sound technically oriented personnel who formulates, facilitates and implements technological development of a nation through training leading to self-dependence (Idialu, 2013). TVE empowers human resource of a nation not only with technical and vocational skills, rather with a diverse range of knowledge, skills and attitudes enough for contributing to the growth of a nation to attain financial freedom. (TVE) on the other hand, employs formal (school based), non-formal (enterprise-base) and apprenticeship

(Okoye & Okwelle, 2013). In Ghana, TVE is provided in both school base and enterprise base system of training. This is to empower individuals to be creative. At present, TVET provides education and training opportunities to prepare students and other clients for wages and salary through gainful employment. It also addresses the continuous skills training requirements of individuals who are already in the labour market and would need to upgrade or develop new competencies to enhance employability and improve productivity (Augusto Boboy Syjuco, TESDA). Quality Assurance (QA) is a critical way of examining the objectives, attitudes, procedures and institutional control systems with an idea for ensuring that set standards and quality are on course and maintained (Idialu, 2013). The importance of TVE QA is to see to it that the effectiveness of its delivery is towards achieving set standards (Idialu, 2013). Therefore, Quality Assurance for technical and vocational education is the process of monitoring and assessment in line with defined requirements. According to Lao People's Democratic Republic, quality assurance is a watchword for helping an institution to gain confidence in its quality and gain an increase in public (Technical & Education, 2015). Quality assurance enables TVE to continue to give hope to the citizenry of a nation with regards to attainment of self-actualization. In view of this, the need for ensuring quality is crucial (Technical & Education, 2015). The purpose of this paper therefore is to identify factors for ensuring quality assurance practices of technical and vocational education (TVE) delivery in Ghana. This study becomes extremely important to come out with a reliable research-based evidence on factors for ensuring quality assurance practices of TVE delivery in Ghana.

1.2 PROBLEM STATEMENT

A lot of literatures have come out with issues confronting quality assurance of TVE globally, especially in the developing countries such as Ghana (Mhlanga, 2008; Morris, 2013). This is a worrying phenomenon. It is an undeniable fact that Technical Vocational Education (TVE) is a tool for development as well as contributing to the socio-economic growth of nations globally. However, lack of quality assurance in TVE delivery poses some threat to the nation's socio-economic growth. Factors perceived to have contributed to low or less quality assurance are; lack of adequate infrastructure for learning, (Oladipupo *et al.*, 2007; Idialu, 2013), uses of unqualified instructional staff, approaches employed by the instructional staff (Idialu, 2013), and commitment level of management in charge of TVE institutions. Total Quality Management demands the total commitment of senior management as well as members of that organization (Holloway D., 1994). This will help the institutions to be on point in all aspects of organizational life including structures, work practices, attitudes and values. Furthermore, TVE is receiving low attention due to perceived perception of many who think that, it is a place for less privilege people in society, class of people with reading and writing deficiencies, students who could not make university grade required for progression or poor academic performance in their various areas of study. In addition, quality assurance faces problems like; lack of prescribed text-books, tools and equipment and funding of Institutions (Akhuemonkhan & Raimi, 2014b). This study has identified issues like lack of quality of products exhibiting by graduates from TVE sector which needs much attention. (Setijono & Dahlgaard, 2015) cited in (Cowpea *et al.*, 2010) attest to the fact that quality control and total quality assurance is a way for ensuring quality assurance practices in TVE delivery. Ghana is noted to be among countries having a history of quality assurance in place but going back to join a large number of countries without formal national programs of

quality assurance. (Materu, n.d.) cited in (Saketa, 2014). However, a lot still need to be done. The outcome of the study will be used to improve on the quality in TVE delivery.

1.3 RESEARCH QUESTIONS

In the quest of addressing the identified factors hindering quality assurance practices in TVE delivery, the following core research questions are suggested:

1. What are the factors hindering quality assurance practices in Technical and Vocational Education delivery?
2. What are the challenges for ensuring quality assurance practices in TVE delivering?
3. What are the best practices available for ensuring quality assurance practices and impact on TVE?

1.4 AIMS

The study sought to explore factors for ensuring quality assurance practices of Technical and Vocational Education (TVE) delivery in Ghana.

1.5 OBJECTIVES

To achieve the above aim the following objectives were set:

1. To identify factors for ensuring quality assurance of TVE delivering;
2. To identify challenges in practicing quality assurance for TVE delivering; and
3. To propose possible best practices for ensuring quality assurance practices in TVE.

1.6 SIGNIFICANCE OF STUDY

Technical and Vocational Education plays an important role in the socio-economic growth of a country by equipping the citizenry with the needed skills for employment, making them self-reliant and also alleviation of poverty. Quality assurance practices would erase negative mind-set on TVE. The purpose of the study is to gather knowledge from countries identified to have in place best practices, approach and policy directions and to develop same in Ghana. It is therefore expected that the study would come out with relevant ideas which will create a platform for ensuring effective quality assurance practices in TVE delivery in Ghana.

1.7 SCOPE OF THE STUDY

The best Technical and Vocational Education depends greatly on the quality outcome of the graduate's ability to satisfy customers' needs. The study concentrated on quality assurance best practices and related mechanisms. This will enhance quality Technical and Vocational Education (TVE) delivery in Ghana. The study will limit its focus on the five (5) NVTI institutions, Testing Department and Head Office all in the Accra Metropolis. This choice represented the required population for the study, making it easier for information collection in respect of the research topic. However, only people with the skills and relevant knowledge to the topic were contacted.

1.8 RESEARCH METHODOLOGY

For the study to achieve its aim, it is important that appropriate method of collecting data is adopted. The study will use both primary and secondary data in collecting the required data for the analysis. Secondary data from literature reviews through journals, publications of appropriate research quarters, books, database on TVE will be collected and analysed. Quantitative research method would be employed. Structured closed-ended questionnaire will be given to respondents to provide relevant responses. Key players such as instructional and supporting staff of the institutes and that of Head Office of NVTI will be contacted to respond in this regard. The data so collected would be analyzed by the use of Google form and Microsoft Office Excel. The outcomes from the analyzed data will be presented in a form of bar charts and pie charts supported with indebt explanations on the collected data.

1.9 STRUCTURE OF THE RESEARCH / STUDY

The study has five (5) chapters in all. Chapter one (1) details out the Introduction of the study emphasizing on the Background of the study, Problem statement, Research questions, Aim, Objectives, Significant of the study, Research methodology and Scope of the study. Chapter Two (2) dealt with literature review of past studies on the topic. Chapter Three (3) dealt with research methods employed which includes sampling techniques, data collection approach. Chapter four will deal with data analysis and its presentation. Chapter five will deal with relevant suggestions, recommendations, further study area, conclusion and contribution to knowledge.

CHAPTER TWO

LITERATURE REVIEW

2.1 INTRODUCTION

This chapter dealt into literature reviews of various studies with regards to the topic. It looked at challenging issues perceived to be influencing quality assurance in TVE delivery (Tripartite Liaison Committee, 2009). It was therefore grouped as follows;

1. The definitions of quality assurance (QA), quality assurance concept in TVE, its importance, general overview of the TVET system in Ghana, evolution and governance of quality assurance in TVET in Ghana under group one.
2. Various challenges influencing quality assurance practices of Technical and Vocational Education (TVE) delivery (Tripartite Liaison Committee, 2009) under second group.
3. Group three also looked into available quality assurance measures for ensuring quality assurance of the delivery of Technical and Vocational Education.

2.2 DEFINITION OF QUALITY

Definition of quality has been identified to be difficult to define due to its numerous concepts in the social science (Stefan Lagrosen, 2004). In view of this and based on literature review, Garvin (1988) and cited in Stefan Lagrosen (2004) divided the definition of quality into five major groups (Stefan Lagrosen, 2004). They are (1) Transcendent definitions. In his view, it goes beyond measurement and logical description and that it is subjective and personal. He then referred quality to a concept of beauty and love. (2) Product-based definitions. In this aspect of definition, he related Quality to a perceived measurable variable which has its basis of measurement to be attributes of product objective. (3) User-based definitions. Quality is a means for customer satisfaction and needs. This means that quality depends on individual point of view based on what he is looking up to or expected. (4) Manufacturing-based definitions. Quality is seen as conformance to requirements and specifications. (5) Value-

based definitions. These definitions define quality in relation to costs. Quality is seen as providing value for costs or money for goods or service. But among all these definitions above, the customer-based definition has been identified to reign supreme. But it will be important to integrate them together to be a means of bridging the gaps emphasising on conformance (Garvin, 1988) cited in (Stefan Lagrosen, 2004). However, project management body of knowledge (PMBOK) defines quality to be activities required to be performed in order to ensure that customer's expectation would be met. That is producing results to meet customer or stakeholder's requirement (Project Management Institute, 2017). In addition to the above, Josie Misko of National Centre for Vocational Education Research (NCVER), has defined quality as 'the degree to which outcomes are achieved against desired benchmarks' (Misko, 2015) and the Health Foundation in the United Kingdom views quality as a 'degree of excellence in health care' (Josie Misko, NCVER 2015). Furthermore, The Business Dictionary defines quality and cited in Josie Misko, NCVER (2015) in manufacturing as being 'free from defects, deficiencies, and significant variations' (Misko, 2015). For the purposes of the study quality in TVE can be defined as the level of excellence in training delivered by public and private training and assessment providers (Misko, 2015).

2.3 QUALITY ASSURANCE CONCEPT

Quality assurance is a degree to which a set of inherent characteristics fulfils requirements (source: ISO, 2000). (National Commission for Further and Higher Education (NCFHE), n.d.) Indicated that quality assurance is about satisfying the need between a group of people or individuals or organizations (NCFHE, 2013). Quality is two-way affair where players decide on what aspect of quality to focus on (NCFHE, 2013). One group come out with needs for the other to satisfy (NCFHE, 2013). National University Commission, (2007) said and was cited in (Chinyere Shirley, Chijioke & Benjamin Chukwumaijem, 2015) that Quality Assurance is a key component of a mechanism for building institutional reputation in a competitive local and global arena and necessary foundation for consumer protection. Furthermore, quality assurance is the most important concept in contemporary educational terminology (Chinyere *et al*, 2015).

2.3.1 Quality and Quality Assurance in TVE

TVE is a concept of education designed to empower learners through the development nurturing of their technical skills, human abilities, attitudes and work habits in order to equip learners adequately for the world of work (Akhueomonkhan & Raimi, 2014a). According to UNESCO and International Labour Organization (ILO), TVE is “*A comprehensive term referring to those aspects of the educational process involving, in addition to general education, the study of technologies and related sciences and the acquisition of practical skills, attitudes, understanding and knowledge relating to occupations in various sectors of economic and social life*” (Badawi, 2013). In the light of this, quality assurance of technical and vocational education is an aspect which is concerned with the training and preparation of individuals emphasizing on qualified skill and acquisition of knowledge which will enable trainees perform an expected task in question. It also means ensuring training with a focus on

making learners or trainees productive enough, ready for any paid employment and self-employment. Therefore, its effective implementation could help in taking care of social exclusion. It will provide alternative employment medium for numerous individuals having it difficult in assessing the labour market due to unavailability of vacancy (Akhuemonkhan *et al*, 2014). Furthermore, it could play an enormous role in contributing to the socio-economic growth, social development, wealth realization and cost of living enhancement. TVET is well- suited to help youths and adults become self-dependent and self-reliant. TVE is helpful in mitigation of high job turnover for those already employed such as workers in industries (Okolocha, 2012). In the quest of achieving quality of TVE delivery, it is the task of the country in question to formulate standards based on her policies and ensure its maintenance with regards to her social-economic needs (Akhuemonkhan & Raimi, 2015). The effective and efficient system and framework governing the TVE delivery and effective regulation that will help in achieving the integrity of VET systems and required qualifications they offer and deliver is much of importance (Misko, NCVER 2015). This will ensure that the stakeholders such as training providers have resources in place required in delivering the required relevant skills and knowledge (Misko, 2015). According to Josie Misko, 2015 in his study '*Regulating and quality-assuring VET: international developments,*' efficient regulation will encourage pursuit of excellence and self-compliance as well as preserving the integrity of national recognition (Misko, NCVER 2015).

2.3.2 General overview of the TVE system in Ghana

In Ghana, technical and vocational education (TVE) has been adopted as an alternative form of education to help contribute to the national socio-economic realization (Ansah & Ernest, 2013). The governance of TVE is currently being regulated by Council for Technical and Vocational education under Ministry of Education (Baffour-awuah & Thompson, 2011). However, the service delivery is being done by a number of institutions under various ministries and their agencies with a legal act of parliament backing them. (Ansah & Ernest, 2013).The **Ministry of Education, Youth and Sports** oversees the basic Junior high schools, Senior high schools, Technical schools and Technical universities formally Polytechnics).The **Ministry of Manpower, Youth and Employment** also per their jurisdiction, are in charge of schools under National Vocational Training Institute (NVTI) scattered across the nation, Opportunity Industrialization Centers (OIC), Youth Training centers under National Youth Organizing Commission; Department of Community Dept., Technical & Vocational Institutes; Department of Co-operatives having Ghana Co-operative College, Kumasi. **Ministry of Environment and Science** in charge of GRATIS/ITTU as well as Registered Private TVET Institutions across the nation (Ansah & Ernest, 2013; Baffour-awuah & Thompson, 2011).

2.3.3 Evolution and governance of quality assurance in TVET in Ghana

The Technical and Vocational Education (TVE) in Ghana has gone through a lot of reforms and legal frameworks. This started from 1967 where a national tripartite board constituted of representatives of the government, the industry, and labour with support from the United Nations Development Programme Special Fund (UNDP/SF) which birthed a national vocational training programme. The purpose was to provide quality skill training to the youth

and citizenry who needs to work for a living and also to reduce the unemployment rate in the nation (Pongo *et al.*, 2014). This as a result saw the establishment of the National Vocational Institute with An Act of Parliament 351 of 12th January 1970 as a legal backing. Their mandate was to coordinate with quality assurance in mind, all vocational related training in the country. (Website <http://www.nvtighana.org>). However, upon realizing the inability to fully meet this important assignment and the perennial unemployment problem among the youth still hanging on the neck of the country, a challenge of the National vocational Training Institute (NVTI), brought about establishment of Council for Technical and Vocational Education and Training (COTVET) backed by an Act of parliament (Act 718) on 27th July, 2006 (Baffour-awuah & Thompson, 2011). Their given core mandate is to coordinate all aspects and related studies of Technical and Vocational Education and Training (TVET) in the country, its quality assurance, as well as come out with relevant modalities (policies) that will enhance socio-economic growth.

2.4 THE IMPORTANCE OF QUALITY ASSURANCE

Meeting the requirement of a client brings about joy, trust and confidence between parties or organisations. With unemployment issues facing the youth and adults who need something to do to make a living, the learners' ultimate concern is whether or not the training would help in realising his or her set dream and that there would be value for money. It is then prudent and necessary for Technical Vocational Education (TVE) providers to apply all required aspects of quality assurance needed in their training delivery in order to give hope to learners. Quality assurance, if ensured in TVE delivery, would benefit the students by gaining employment. Employers will save money in terms of huge budget for training due to the availability of quality human resource. Government of nations will be able to achieve its socio-economic growth target, reduce unemployment rate, livelihood would be improved,

increase institutional admission rate, the institutions getting recognition and attracting patronages to erase or reduce the negative perception about TVE (NCFHE F, 2013). These cannot be realized without high quality in the standard of delivery. Therefore, TVE needs to ensure quality in its delivery for it to gain importance since it is the medium through which assurance for the provision of a well-trained workforce could be realized (Galvao, 2014). The realization of quality will demand that countries view it from a business perspective. In the technical vocational education and training sector, quality assurance is important for securing stakeholders which comprises of government, donors and industries as well as potential clients such as learners and employers (Josie Misko, NCVER 2015).

2.5 FACTORS AFFECTING QUALITY ASSURANCE OF TVE IN GHANA

Quality assurance is a degree to which a set of inherent characteristics fulfils requirements. The National Commission for Further and Higher Education (NCFHE), n.d.) Also describe quality assurance as satisfying the need between a group of people or individuals or organizations (NCFHE, 2013). This anticipated quality is always bedevilled with a lot of factors leading to no realisation of its objective and desired quality of which TVE delivery in Ghana is not to be left out (Boateng, 2012; Amedorme & Fiagbe, 2013). For the purpose of this study, the following factors were considered; environmental, trainees, government and industry as areas of quality assurance challenges of TVE delivery in Ghana.

2.5.1 Environmental factors as Quality Assurance challenges

Ghana issues of low quality assurance of TVE are attributed to a number of environmental factors. The first of its kind is disparities of TVET institutions widespread in the country and their respective curricula and internal understanding of quality assurance in respect to their core mandates (Amedorme & Fiagbe, 2013). The institutions are National Vocational

Training Institute (NVTI), Ghana Education Service (GES) technical institutes, youth training institutions and a variety of private vocational training schools (Amedorme & Fiagbe, 2013). In addition to this, there are non-formal TVET practices alongside which leads to no certification with their own quality assurance practice adopted. These practice uses workshops, short courses and seminars (Amedorme & Fiagbe, 2013). Traditional apprenticeship- based training makes up the majority of the informal sector. However, a research conducted by the Government of Ghana, 2003 found and cited in (Amedorme & Fiagbe, 2013) indicated that majority of Ghanaian parents have negative perception and doesn't want their wards/children to study in TVE institutions (Amedorme & Fiagbe, 2013; (Government of Ghana, 2003). And that TVE is for people who are academically less-endowed. Also graduates from TVE find it difficult to proceed to the higher education they have been dreaming to attain. This makes TVE a dead-end (Hughes *et al.*, 2017). Due to the above, the public do not follow with keen interest as to how quality assurance is assured.

In Pakistan, TVET is rated low by the citizenry with the impression that it attracts lower financial benefits in the society (Government, 2011; Reliance Services, 2012). Furtherance to the above, TVE has not been able to meet the needs of the industries with regards to quality. In Nigerian, Omede, (2012) said in his report that the educational system such as TVET is not able to meet the needs of the industries and the society (Omede, 2012). Similar was said in an empirical study in Pakistan on the *relevance of TVET* with regards to meeting the needs of the industry which was remarked 53% in affirmative (Reliance Services, 2012). It was these realizations that informed the deliberate inclusion of funding as one of the key quality assurance indicators in several working papers of TVET (UNESCO, 2002; ETF, 2012; Reliance Services, 2012).

2.5.2 Trainees' factors as Quality Assurance challenges

Trainees studying in TVET institutions are the major key stakeholders and customers who can assert and be the ambassadors of their courses with regards to quality education and knowledge they would be receiving and being impacted. Regardless of quality inputs from the service deliverers, curricula, quality policy formations for that matter, meeting of the students or trainees needs and satisfaction is paramount (Ibrahim, Rahman & Yasin, 2014). In this vain, quality assurance of TVE delivery is to gear towards providing and satisfying the needs of the trainees without doubts. To achieve this, it will call for managers and stakeholders of the service providers to orient students enough about their programmes (Ibrahim, Rahman & Yasin, 2014). The understanding of quality from trainees' point of view depends on the information dissemination with regards to the importance of their chosen program and its prospects ahead after completion (Chinyere Shirley, Chijioke & Benjamin Chukwumaijem, 2015). This enables them to choose a preferred course and accord it all the required seriousness. Students or trainee's response reign supreme for quality performance measurement of service delivery. According to (Nair et al., 2011) and cited in (Ibrahim, Rahman & Yasin, 2012) indicates that students looks for quality in teaching and curriculum design. Their effective response ensures approval of quality assurance be it the output of teachers, service delivery and support facilities (Ibrahim, Rahman & Yasin, 2012). Also, students sees quality of their teachers base on feedbacks and cordiality of teacher and student's relationship. Notwithstanding the above factors, quality assurance cannot be achieved when trainees' interest has not been served. Regardless the efforts from policy makers and the teaching institutions to ensure quality, factors from the trainees' side of the coin could be a great challenge. Such factors could be; entering qualification, lack of self-confidence, irregular attendance and poor interest to learning (Chinyere Shirley, Chijioke & Benjamin Chukwumaijem, 2015).

2.5.3 Government factors as Quality Assurance challenges

The government contributes to factors that would go a long way to affect quality assurance in TVE education delivery (Chinyere Shirley, Chijioke & Benjamin Chukwumaijem, 2015). Apart from the provision of infrastructures, equipment and tools, legal frameworks and the likes being a contributing agent of not achieving quality assurance, factors such as lack of incentives for both teachers and trainees has also been identify to be a contributor (Noraini Kaprawi & Anis Mardhiyah Azroai, 2009). Teaching or instructional staff in the TVE institutions will have to be sponsored to embark on training courses needed to enable effective discharge of their assigned duties. They will also acquaint themselves to new ways of effective delivery, new methodology and technological advancement with regards to quality delivery (Chinyere Shirley, Chijioke & Benjamin Chukwumaijem, 2015). Students on the other side should be supported with the acquisition of tools and equipment needed fundamentally for effective learning. In addition, non-provision of scholarships has been identified to contribute to quality TVE delivery (Chinyere Shirley, Chijioke & Benjamin Chukwumaijem, 2015). Due to low attention from the general public, it will be prudent for the government to institute scholarship scheme in place to encourage the youth who would like to opt for TVE as an alternative of education and also feel important (Chinyere Shirley, Chijioke & Benjamin Chukwumaijem, 2015; UNESCO, n.d.).

Furtherance to the discussed above, selection of favorites as teachers into the institutions providing TVE by the government of the day in view of certifying supporters without due diligence as to whether the selected personnel qualified or not would have an effect on quality assurance attainment (Chinyere Shirley, Chijioke & Benjamin Chukwumaijem, 2015).

2.5.4 Industrial factors as Quality Assurance challenges.

Try as hard as the policy makers, service deliverers, government and trainees would put into training, it will still boil down to the acceptance of the trainees by prospective industries. The industries being the employers need to be involved to bring on board the expected quality needed as pertaining in the world of job market. They will play a major role in the determination of quality indicators. This will go a long way to eliminate criticisms of poor quality of TVE delivery. Hence, ensuring employment opportunities for the trainees (Michael, 2014). The effective involvement of industries will help in coming out with curricula that certifies quality assurance needs of the employers as well as curb or solve unemployment problems facing graduates from TVE institutions (Michael, 2014) . They will act as a useful tool for knowing the required skill needed for the word of job market and to help strategize for effective delivery of TVE training and or avoiding training and industrial mismatch (Michael, 2014; Chinyere Shirley, Chijioke & Benjamin Chukwumaijem, 2015)

2.6 CHALLENGES INFLUENCING QUALITY ASSURANCE OF TVE

There are numerous challenges contributing to low quality assurance of the delivery of TVE. For the purpose of the study, the following would be considered; Poor environment and inadequate Infrastructure, Qualification of the Instructional staff, lack of commitment of management and inadequate funding of TVE programmes.

2.6.1 Poor environment and inadequate infrastructure

Conducive environment provides and encourages learning and bring about quality outcome of the trainers and trainees of a training institution. Lack of provision of a safe environment for training demotivates the learners and shuts their interest (Misko, NCVER 2015). Unfortunately, most of the TVE learning institutions in Ghana are being confronted with poor environment and inadequate infrastructure. This as a result defeats the quest of achieving

quality and quality assurance in their service delivery. According to Anyakwo (2012) and Aworanti (2012) cited in Ayonmike, *et al* (2015) some of the challenges that affects quality assurance in the delivery of TVE can be attributed to inadequate classrooms size and functional facilities. Standard and spacious classroom facilities are of high importance and needs consideration if quality assurance is to be achieved (Idialu, 2013). He also attests to the fact that many institutions running technical and vocational education programmes are facing facility challenges making it difficult for training. Vocational education is practical oriented and the absence of infrastructures and conducive environment poses threat to quality delivery. Salisu (2000) in her study '*the influence of school physical resources on students' academic performance*, and cited in (Ethel Idialu, 2013) indicated that there is vast significant in the academic output difference between students in institutions having adequate facilities and those with inadequate facilities (Idialu, 2013).

2.6.2 Qualification of the instructional staff

It is important for any service provider to be of a caliber who is a master of the subject area, have control and the required qualification to provide the intended service. Ayonmike, Chinyere Shirley et al (2015) affirmed that one of the challenges influencing quality in TVE is paucity of qualified vocational education teachers. (Chinyere Shirley et al, 2015). Therefore, the need to employ quality teacher or trainers into any educational sector such as TVE is crucial and devoid of compromise. Adegoke (2002) identified and cited in (Ethel Idialu, 2013) that the quality of a teacher in charge of training could be used as one of the indicators of standards in teaching institutions. For TVE to achieve its required aim and objective, the instructors are to effectively teach the students (Okoro, 2005) cited in (Okoye, 2010). In line of this, the teachers are to poses qualities of practical occupational skill in their area of specialization, teaching skills necessary in classrooms and workshop situations (Okoye, 2010) since Quality Assurance cannot be guaranteed when the quality of personnel is

soft standard (Idialu, 2013). Due to this, Okoro (2005) suggested and cited in (Okoye, 2010) that TVE instructors who have enough and require practical skills and industrial experience should be considered (Okoye, 2010). That notwithstanding, (Wheelahan & Moodie, 2010) stated in their report '*the quality of teaching in VET*' that, teachers/trainers and assessors seeking for employment to teach in TVE institutes to undertake a required entrance qualification test to warrant employment and not depending on their individual required certificate from their various institutions (Wheelahan & Moodie, 2010). Idialu (2013) added that teachers/trainers should be supported to undertake refresher courses relevant to their area of expertise to develop themselves enough to be able to withstand challenges and also meet current and future demands. Idialu (2013) also seconded and suggested that there should be institutional strategies in place to support new teachers and trainers (Wheelahan & Moodie, 2010)

2.6.3 Commitment of management of TVE institutions

For quality assurance to be realized, commitment of top management in charge of an organization is vital. They are to give directions to development and implementation of a system, its improvement and effectiveness (ISO 9001:2008). The commitment involves establishment of quality policy, ensuring its objectives are met, and review when it matters and ensuring funds needed are available (ISO 9001:2008). Therefore, management in charge of the TVE institutions has a duty to ensure that they commit themselves to their call of duty as managers of institution are to adhere to. Furthermore, they are to make sure that teachings are in conformity with the laid down principles of the quality assurance agencies as well as meeting customer satisfaction. For top management to be effective, Quality System cycle: Plan, Do, Check, Act should be adopted. (Laurea's Quality System). This cycle will help management deal with the basis for operational planning (Plan), the operations and processes

(Do), the monitoring and assessment targets (Check) and the methods, procedures and tools used to develop the operations (Act) in an organization (W. Edwards Deming).

2.6.4 Inadequate Funding of TVE programmes

Inadequate funding is a very serious issue that will defeat the desire of achieving quality assurance in technical and vocational education (TVE) programme delivery in developing countries, using TVE as an alternative means of education as well as imparting employable skill training in their citizenry such as Ghana (Idialu, 2013). Though government of Ghana directs a quota of its budgets towards funding of TVET, it still lacks fund to implement various programmes (Education, 2016). This has affected the progress of the TVE institutions (Amadi, 2007). Ebenebe (1991) in his study admonished governments of developing countries to increase funds of the TVE institutions in order to ensure quality and also enable them executes their educational and training mandates effectively, thus produce the right caliber of people that industries and the public can rely on Ebenebe (1991). George I. Ken. Akaninwor, (n.d) in related study on '*inadequate funding of higher education in developing areas,*' it came out that the technical and vocational training institutions which are responsible for providing the much-needed technical manpower for Nigeria was hit by poor funding. This was affirmed by (Mbata, 1990) who also said in his study that major factors that tend to complicate the administrative problems in technical education in Nigeria is inadequate funding (Mbata, 1990). (Akintayo Buhari-Alade. Akintayo, 2013) in their study tagged it as the bane of development in education for that matter TVE. Ladipo *et al.*, (2013) added to the findings that TVET has been experiencing fall in quality on account of poor funding/financing (Ladipo e al., 2013).

2.7 QUALITY ASSURANCE PRACTICES IN TVE

Quality assurance encompasses all activities performed in achieving results regarding the required set standards and practices (Institute of Internal Auditors, 2013). It involves planning, doing, checking and act (PDCA). Continuously keenly checking on performance and receiving information on results which inform decision in policy making (Machumu *et al.*, 2014). This help in promoting and tracking the progress of system under review for quality assurance (ETF, 2014). Therefore, quality assurance in the context of the study looked at the following themes; Overview of Quality Assurance System, what it stands for and the need for its pursuit, Accreditation of Qualifications of TVE Qualifications Framework which involves agreed standards set by the regulatory bodies serving as indicators for monitoring quality.

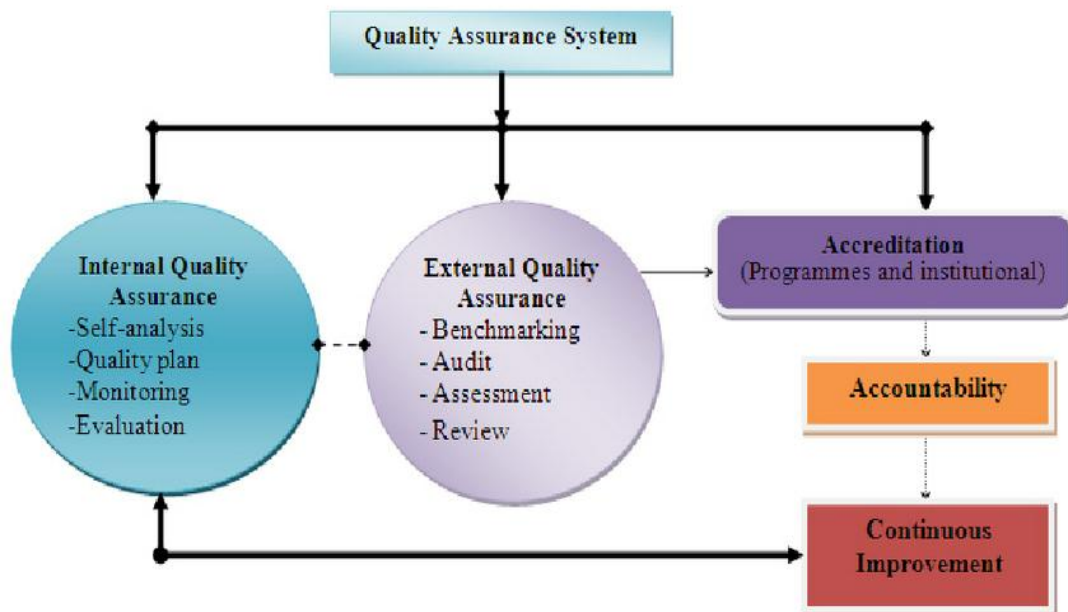


Figure 2.1: Quality Assurance Practices in higher education institutions (HEIs)

Source: (Machumu *et al.*, 2014)

2.7.1 Planning and Implementing TVE programmes by government

For TVE programmes delivery to be quality which will lead to employment of the citizenry of a nation, it will call for proper planning and effective implementation. Therefore, all potential TVE programmes that will lead to the attainment of these important feat is to be properly planned and put in place by the government. However, the quality assurance of these programmes will call for an effective supervision and monitoring of the institutions providing the tuition by the government agencies (Machumu *et al.*, 2014). The COTVET being the mandated regulatory body would need to be empowered by the government to embark on monitoring the progress of training in TVE institutions effectively. Quality assurance of TVE delivery is always left to the institutions providing the training and they are being measured or judged by their final examination results after completion of their courses. Therefore, this practice should be stopped and institutions must be responsible to assess the running of the programmes of the institutions and provide guidelines and directions for its effectiveness (Machumu *et al.*, 2014).

2.7.2 Accreditation of Qualifications of TVE Qualifications Framework

Quality assurance call for the institutions providing the teaching to register the school and the programmes to be offered with the agencies put in place by the government which is being backed with legislative instruments (LI) (Cuttance, 1994). This creates hope for the general public to access this establishment. Learning objective, aims and outcomes are set as a base to be followed so as to attain the required quality. More so, the mechanism for testing for quality and quality assurance is set to serve as guideline to management and trainers of the institutions in the quest of their service delivery (Syjuco, 2012; ETF, 2014). In achieving this important deserve quality, accreditation agencies are to be established to facilitate this process. In line of that, National Accreditation Board (NAB) was established in 1993 with

the enactment of the NAB LAW 1993 (PNDCL 317) as quality assurance agency to make sure that all institutions are assessed and accredited before operation in Ghana (Machumu *et al.*, 2014).

However, TVET education has council of technical education and training (COTVET) has been established with an enactment, Act of Parliament (Act 718) 2006 (Baffour-awuah & Thompson, 2011) responsible for the accreditation of institutions and their respective courses.

2.7.3 Registration and Accreditation of Training institutions and Organizations.

Registration of organizations and institutions providing TVE would lead to quality assurance desired in TVE delivery (Tripartite Liaison Committee, 2009). The registration bring training institutions under one umbrella for easy monitoring by the quality assurance agencies (Tripartite Liaison Committee, 2009). In Ghana, COTVET is in charge of registering and accrediting institutions providing TVE and their respective courses offered (No, 2016). This is to make sure that quality reign supreme since it is a cornerstone of development (Tripartite Liaison Committee, 2009). Though it is mandatory for institutions and organizations providing TVE to register, the process is made flexible by COTVET. As a result, majority of providers have not registered (No, 2016). As such, institutions and organizations are not under pressure to comply so they provide training without accreditation which compromises quality.

2.7.4 Internal and external supervision

Quality assurance supervision in teaching is done in two folds, thus internal and external supervision. This is done to ensure required standards are followed with regards to its principles which leads to the attainment of quality assurance in TVE delivery (Machumu *et al.*, 2014).

2.7.4.1 The internal supervision

The Internal Quality Assurance (IQA) supervision is done by the trainers and management of the institutions providing the service (internal verifiers) (Machumu *et al.*, 2014). The management holds the teachers responsible for quality assurance and delivery (Kotirde & Yunos, 2015). Their main call for duty is to render quality service to the trainees. So, all techniques needed to ensure quality in delivery are employed since QA attainment depends on the institution and it is done in view of the laid down principles established by the external authorities such COTVET (Machumu *et al.*, 2014). The institutions achieve this by way of creating internal criteria and methodologies which would address the policies of the external authorities (Machumu *et al.*, 2014). These Quality Assurance principles are to be monitored by the administration and trainers of the institution to ensure quality control.

2.7.4.2 The external supervision

The external supervision of quality assurance in TVE delivery is done by a mandated council such as COTVET in the case of Ghana (Education, 2016). Quality assurance modalities are set and explained to the latter to the training institutions providing the training to adhere to (Machumu *et al.*, 2014). The quality assurance team therefore visits the TVE institutions to monitor and evaluate as well as enforce compliance of the set required quality assurance in their delivery (Cao, Xiaonan; Chen, C; Ntuli, JW.; Mathobela, 2014). The team encourages teachers or trainers and also teaches them with regard to new trend in technology, alternative and innovative way of imparting knowledge in both theory and practical for adoption and adaption (Chinyere Shirley, Chijioke & Benjamin Chukwumaijem, 2015; Yunos *et al.*, 2012). This exercise promotes quality delivery effectively in TVE delivery from the trainers of the institutions (Cao, Xiaonan; Chen, C; Ntuli, JW.; Mathobela, 2014).

2.7.5 Funding of TVET programmes

The government of Ghana as a major stakeholder responsible for the funding of TVE is to make sure that adequately funds are available for processes, planning and implementation of programmes of TVE delivery (Education, 2016). This is achieved through budgetary allocation needed for the agencies and ministries in charge of activities and programmes undertaken by the TVE institutions. Though government is trying by means of budgeting allocation for TVE in Ghana, it is still not adequate for effective implementations and execution of TVE programmes (Education, 2016). Therefore, the civil society such as private sectors, non-government organizations, and industries in the nation could be consulted to contribute to complement the effort of the government to provide this more important funds (Ogbuanya & Izuoba, 2015) . This will enhance smooth running of the delivery of TVE and ensure quality. More so, the government could create an innovation financing intervention to generate special funds annually towards the funding of the institutions (Ogbuanya & Izuoba, 2015).

2.7.6 Provision of infrastructure and facilities in TVE institutions

Currently, the TVE institutions in Ghana lack physical infrastructural facilities for smooth running of the school programmes. This as a result compromises with the deserved quality assurance. Facilities such as buildings (classrooms and workshops), relevant tools and equipment, instructional materials in the schools enhances training and ensures quality (Anon, 2015). However, the few ones available are either inadequate or obsolete which does not merit current method and approach in TVE training delivery. It will be important for the Government of Ghana to make it a priority to ensure that institutions providing TVE are retooled for smooth running of their programmes in order to enhance quality (Education, 2016). Lack of tools and equipment have been contributing to the poor performance of trainees in the TVE institutions (Bin, Kamin & Bin, 2013).

2.7.7 Provision of instructional materials.

Quality assurance cannot be achieved without instructional or teaching materials. It serves as a base for trainers in demonstrating and executing smoothly the discharge of their duties as well as promoting effective training required (Anon, 2015). Teachers in TVE institutions lacks textbooks in their individual course area and this affects quality assurance in their delivery (Ogbuanya & Izuoba, 2015). The syllabi have a lot of extracted course contents or materials from variety of books making it difficult and expensive to acquire them. This however, leaves the teachers to come out with their own strategies in acquiring instructional materials. This sometimes affects quality when their improvising strategies are not perfect (Journal *et al.*, 2016).

2.7.8 Provision of scholarship/grants for TVET teachers/instructors

Teachers in TVE institutions are to be abreast with time and ready to execute any assigned task in their area of profession with the quality it deserves (Michael, 2014). This is because the teachers themselves are to be quality assurance officers. Their output, preparation, delivery and assessing trainees has direct bearing on education in general and the graduates who will come out after completion of training (Anon, 2015). In this regard, the level of qualification, experience, and competencies are of a greater concern if quality of TVE delivery is anything to go by (Ogbuanya & Izuoba, 2015). Therefore, training needs survey should be conducted intermittently on the teachers to know what they lack and equip them. In view of this, the teachers are to be sponsored by the government in conjunction with either donors or bringing on the civil society to contribute. This could be done through in-service training, short courses, internet tutorship from peers and field trips (Anon, 2015). Scholarships should be offered to teachers to enable them go through training to acquire requisite knowledge and experience for effective of their duties (Anon, 2015). This will also build the capacity of the teachers.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 INTRODUCTION

Research methodology is about procedures and required means that would be employed or adopted by a researcher in the quest of realizing information required pertaining to the study being undertaking. Research plays very important role in the development of society by finding answers to problems confronting a group of people. Since it a long-life learning it will call for systematic approach in the cause of discovering potential antidotes to problems. With this chapter, details of the methodology and approach used in realizing the research's aim and objective were outline. It considers the conceived predictions and thoughts which led to research question for the study. More so, it indicated the study population, sample size and the reason for the selected size. Again, data collection and the approach employed for collecting the data were discussed. Also, data analytical strategies adopted were outlined in this chapter. Myers, 2009 and cited in (Thomas, 2010) affirmed that research methodology help in moving from thinking and perception to designing and data collection of a study under consideration (Thomas, 2010).

3.2 RESEARCH STRATEGY.

Research strategy is a way of resulting in one of the alternative ways of collecting data for a research work. A research strategy details procedural way suitable for gathering data and its subsequent analysis. Choosing a strategy for research work depends greatly on the aim and objective of the study and the type of information to be collected for the study and also the information needed with regards to the audience. Research strategies mainly preferred by researcher are qualitative or quantitative even though there are others which are also important (Thomas, 2010). The duo is equally important and play almost the same role and

can both be used in one study to complement the effort of the other. Either has no advantage on the other (Thomas, 2010). However, quantitative methods are used in presenting findings of a study statistically base on numbers whilst qualitative methods present data in the descriptive form (Sinaga, 2016). It also believed by a school of thought that all researches are both quantitative and qualitative since findings of every study or research could be counted as well as stating meanings of a results (Course, 2015). However, both presents slightly difference which is shown in the **Table 3.1** below. For the purpose of this study, quantitative approach was used since statistical method was employed in analyzing the data and the results were generalize as the factors for ensuring quality assurance in TVE delivery in Ghana.

Table 3.1 Differences between quantitative and qualitative approaches

Orientation	Quantitative	Qualitative
Assumption about the world	A single reality, i.e., can be Measured by an instrument.	Multiple realities
Research purpose	Establish relationships between measured variables	Understanding a social situation from participants' perspectives
Research methods and processes	- procedures are established before study begins; - a hypothesis is formulated before research can begin; - deductive in nature	flexible, changing strategies; - design emerges as data are collected; - a hypothesis is not needed to begin research; - inductive in nature.
Researcher's role	The researcher is ideally an objective observer who neither participates in nor influences what is being studied	The researcher participates and becomes immersed in the research/social setting.
Generalisability	Universal context-free generalizations	Detailed context-based generalizations

Source: (Thomas, 2010)

3.3 UNIT OF ANALYSIS AND DATA SOURCES.

In order to have a sound and unbiased data to analyze for the study, the researcher has to exercise utmost carefulness in data collection. The data collected for the study were from both primary and secondary sources. Literature review from various studies in regards to the study was reviewed in collecting secondary data from through journals, publications of appropriate research quarters, books, database on TVE were collected and analysed. On the other hand, primary data were gathered from the Instructional and supporting staff of the selected institutions and the Head Office of National Vocational Training Institute (NVTI).

3.4 POPULATION.

Population is about a particular identified individuals, group of people being considered for the purpose of a research or study. The study population focused on the National Vocation Training Institute. NVTI has thirty-four (34) Training Institutions and offices in charge of Testing all over the country. They are notable to provide Technical Vocation in Ghana hence its consideration for the study.

3.5 SAMPLE FRAME.

Due to limitation of funds and time to conduct the study, using the entire population involving NVTI institutes became difficult and impossible. However, the Institutions in greater Accra region formed the population frame for the study. In view of this the results cannot be used to generalize the factors for ensuring quality assurance in TVE delivery in Ghana. The institutions that made up of the population sample were; Pilot Training Institute (PTI) having a staff number of Fifty (50), New Century Career Training Institute (NCCTI) of Thirty-three (33), Kanda Career Training Institute (KVTI) of Twelve (12), Construction Machinery Mechanic Training Institute (CMMTI) of Fifteen (15), Tema Industrial Mission Vocational Training Institute (TIMVTI) of Thirty (30) and Head Office also with the staff strength number of seventy-one (71) making a total of Two hundred and eleven (211) as a

target audience out of the overall total of six hundred and eighty (680) being the total staff strength of NVTI.

3.6 SAMPLING SIZE.

Sampling size is used in a research study for the purpose of deciding or selecting size of a target audience (Techniques, n.d.). It allows for working with enough part of the entire population of the study. It is useful when it becomes impossible to conduct a study on a bigger size of population due to financial and time needed to come out with required results of the study. However, to avoid disparities in sampling, Yamane (1967) developed a formula to aid researchers in deciding on a befitting sample size. The formula is demonstrated in the **Table 3.2** shown below. It gives a 95% confidence level, P = 0.5 and e= 5% are assumed. $n = \frac{N}{1+N(e)^2}$, Where n is the sample size, N is the population size, and e is the level of precision.

Table 3.2. Sample Size for ±5%, ±7% and ±10% Precision Levels

Size of Population	Sample Size (n) for Precision (e) of:		
	±10%	±7%	±5%
450	82	140	212
425	81	138	207
400	80	135	201
375	79	132	194
350	78	129	187
325	77	125	180
300	76	121	172
275	74	117	163
250	72	112	154
225	70	107	144
200	67	101	134
175	64	94	122
150	60	86	110
125	56	78	96
100	50	67	81

Source: Yamane (1967)

3.7 SAMPLING TECHNIQUE

Sampling techniques are used in realizing the size of a population for a research study. There is a numerous technique available and each technique presents a unique reason for its application. For the purpose of the study, Stratified and Purposive random sampling techniques were employed. Therefore, the five selected institutions and the head office were group into a stratum and a required number were selected from each strata in accordance to their number. In all Samples size of one hundred and seventy-seven (151) being number of staffs of the five (5) NVTI institutions including the head office in Accra were selected and questionnaires were distributed to them to solicit for answers. Table 3.3 below illustrates how the samples were selected from the various institutions.

Table 3.3 Number selected to represents the respective institutions

Institutions	Population	Number selected
Head Office	71	41
Pilot Training Institute (PTI)	50	34
New Century Career Training Institute (NCCTI)	33	25
Tema Industrial Mission Vocational Training Institute (TIMVTI)	30	24
Construction Machinery Mechanic Training Institute (CMMTI)	15	15
Kanda Career Training Institute (KVTI)	12	12
total	211	151

Source: Field Survey, 2018

3.8 DATA COLLECTION INSTRUMENTS.

In order to gather information for the study, there would be the need to collect data from the target audience for analysis. This will call for appropriate data collection instrument to aid in achieving the aim and objective of the study (Critically & Everyday, n.d.). Questionnaires are most and effective instrument in collecting data from an identified pool of population. In view of this, self-administered close-ended questionnaires were designed to gather information from the respondents to form a data. Close-ended questionnaires allows the researcher to control and analyze data easily whilst the respondents in the other hand have it easy in selecting option among presented views. The questionnaire was structured in a table form with a multiple choice in a ranking order for respondent selection. Salant et al (1994) cited in (Anon, 2013) asserts that multiple choice questionnaires is more convenient for ranking items in preference order.

3.9 QUESTIONNAIRE DESIGN AND FORMAT

In order to achieve the aim and the objective, primary questionnaire was designed to welcome information from the relevant respondents needed for the study. This was done with the various literature reviews in connection with the topic of the study. The questionnaire was organized as follows; section **A**, the demography of the respondents which enquired about the institutions in which they worked amongst the selected, how long they have been with the institute, their ranks and the highest qualifications. In section **B**, Respondents were also asked to rank among options of factors which perceived to be affected quality assurance in TVE delivery in the scale from 1-Strongly disagree, 2- Disagree, 3- Undecided, 4- Agree, 5- Strongly agree. Section **C** on the other hand presented options about challenges to the respondents to rank in the scale of 1-Strongly disagree, 2- Disagree, 3- Undecided, 4- Agree, 5- Strongly agree and Section **D** asked respondents to rank among best practices options in

regards to the study using a Likert scale from 1-Excellent, 2- Very good, 3- Good, 4- Fair, 5 – Poor. The respondents were drawn from five NVTI institutions as well as the institutes head office in the Greater Accra region.

3.10 DATA PROCESSING AND ANALYSIS

Data so gathered in a study are analyzed base on the frequent various questionnaires were viewed by the respondents. The analysis comes about the meaning of the presented information. The analyses reduced data into a form that drawn conclusion in regards to the perceived study problem pertaining to the research objectives. Descriptions of the data was done by means of percentages and frequency charts to illustrate the results. Descriptive statistics, Mean score Index, Relative Importance Index (RII) were adopted as a statistical tool in this regard. Identified trends realized were discussed leading to the conclusion of the study.

3.10.1 CHAPTER SUMMARY

The chapter mainly outlined methodology employed for the research and data collection instrument adopted. More so, the population and its sample size attainment, sampling technique used. The chapter throw light on research philosophies for the appreciation of knowledge. In addition, Questionnaires type used in collecting data for the study. Lastly, the data analysis method adopted for the study was touched on. The following chapter will therefore present the studies outcome.

CHAPTER FOUR

DATA ANALYSIS AND DISCUSSIONS

4.0 INTRODUCTION

In order to present the outcome of the study, data collected must be analyzed. This chapter therefore, presents the analyzed and discussed data of the study. The data so collected from the respondents constitutes primary data. The respondents were staff of national vocational training institute (NVTI) in Accra. The analysis employed simple descriptive statistics, mean score index, Relative Importance Index. This was done with the objective of the study in mind. To identify factors for ensuring quality assurance of TVE delivery, to identify challenges for ensuring quality assurance practices of TVE delivery and to propose possible best practices for ensuring quality assurance practices in TVE delivery in Ghana.

4.1 SURVEY RESPONSES

Out of one hundred and fifty-one (151) expected responses from the questionnaires sent to the staff of National Vocational Training Institute's institutions namely; Pilot Training Institute (PTI), New Century Career Training Institute (NCCTI), Kanda Career Training Institute (KCTI), Construction Machinery Mechanic Training Institute (CMMTI), Tema Industrial Mission Vocational Training Institute (TIMVTI) and Head Office in Accra. One hundred and thirty (130) responds representing (86.09%) were received. The questionnaire was designed by the use of Google form was sent to the Institutions for answering through their respective WhatsApp platforms. This was followed up with personal calls to the platform administrators to constantly and persistently reminding notice.

4.2 DESCRIPTIVE ANALYSIS OF DEMOGRAPHIC DATA

This part of the questionnaires was used to obtain information about the respondent's place of work, number of years they have been with the NVTI as a whole, their status or positions as well as level of higher academic qualifications. This was to ensure that only staff of the Institute responds to the questionnaires for the authenticity of the information gathering.

4.2.1 Place of work

The table 4.1 below demonstrates the total number of respondents and their respective institute of NVTI they work. The results as shown in the Table 4.1 and Figure 4.1 respectively above, was the total number of the respondents who responded to the questionnaires. This implies that the total number of respondents who completed the questionnaires were One hundred and Thirty (130) out of One hundred and fifty-one (151) expected representing 86.09%. The respondents were as follows; from Nvti Head office were thirty-six (36) being twenty-seven point seven (27.7%), Pilot Training Institute (PTI) were twenty-seven (27) representing 20.8%, New Century Career Training Institute (NCCTI) provided twenty-six responds which is 20%, Tema Industrial Mission Vocational Institute (TIMVI) with a total of fifteen (15) representing 11.5%, Kanda Career Training Institute (KCTI) and Construction Machinery Training Institute (CMMTI) presented thirteen (13) responds each representing 10% apiece in that order.

Table 4.1: Place of work of Respondents

Place of work	Frequency	Percent (%)	Cumulative Percent (%)
Pilot Training Institute	27	20.8	20.8
New century career Trg.Inst.	26	20	40.8
Kanda Career Trg. Inst.	13	10	50.8
Construction machinery Trg. Inst.	13	10	60.8
Tema Industrial Mission Vocational Institute	15	11.5	72.3
Nvti Head Office	36	27.7	100
Total	130	100	

Source: Field Survey, 2018

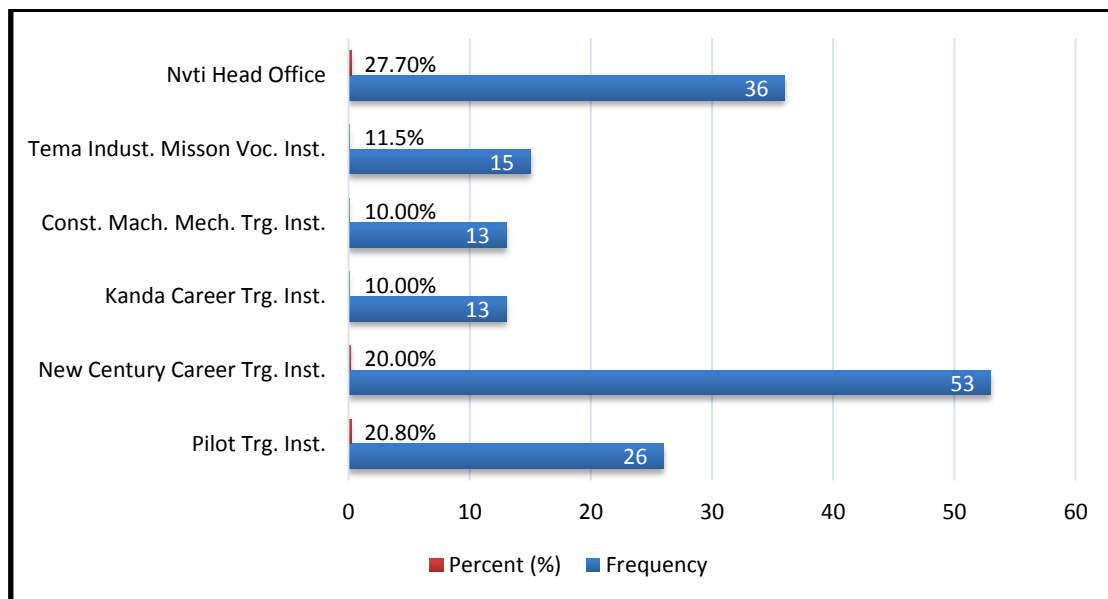


Figure 4.1: Bar Chart showing number of respondents from the various institutions (Place of work)

Source: Field Survey, 2018

4.2.2 Number of years with the Institute

The questionnaire sorted to know the number of year's individual respondent has been with the National vocational Training Institute. This was in the ranges between; 1 - 5 years, 6 - 10 years, 11 - 15 years, 16 - 20 years and Over 20 years. Figure 4.2 indicates that out of one hundred and thirty (130) respondents, seven (7) were between 1 – 5 years, representing 5.3%, those between 6 -10 years range were fifty-three (53) representing 48%, between 11- 15, forty-six representing 35.4%, Between 16 - 20 years twenty-one (21) respondents which was 16.2% and that of Over 20 years were three (3) representing 2.3%.

Table 4.2: Number of years with the Institute

Years	Frequency	Percent (%)	Cumulative Percent (%)
1 - 5 years	7	5.3	5.3
6 - 10 years	53	40.8	46.1
11 - 15 years	46	35.4	81.5
16 - 20 years	21	16.2	97.7
Over 20 years	3	2.3	100
Total	130	100	

Source: Field Survey, 2018

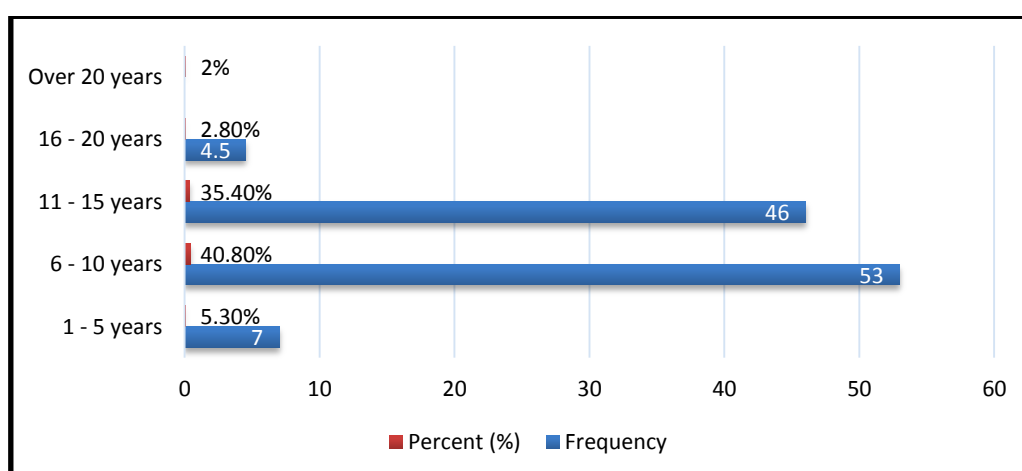


Figure 4.2: Bar Chart indicating Number of years spent with the institute by the Respondents

Source: Field Survey, 2018

4.2.3 Current Status.

The questionnaires sorted to know the current positions or ranks they are occupying in the institute. Table 4.3 indicates the various ranks being occupy currently. The ranks are as follows; instructor, training officer, senior training officer and principal training officer in ascending order. Meaning from an instructor one is promoted to Training officer rank then to senior training officer and ends at principal training officer. More so, there are also other ranks which are based on responsibilities assigned to them. From the data gathered, the respondents were from the range of instructor to principal training officer. However, four (4) assistant registrars and the regional coordinator of Greater Accra region from testing division among the respondents. Out of the total respondents, twenty-eight (28) were instructors representing 21.5%, training officers were forty-nine (49) representing 37.7%, senior training officers were thirty-nine (39) which was 30%, nine (9) principal training officers representing 6.9% completed the questionnaires. Four (4) number of Assistant registrars forming 3.1% and a regional coordinator, GAR also 0.8% completed the questionnaires.

Table 4.3: Current status of Respondents

current status	Frequency	Percent (%)	Cumulative Percent (%)
Instructor	28	21.5	21.5
Training officer	49	37.7	59.2
Senior Training officer	39	30	89.2
Principal Training officer	9	6.9	96.1
Assistant Registrar	4	3.1	99.2
Regional coordinator, GAR	1	0.8	100
Total	130	100	

Source: Field Survey, 2018

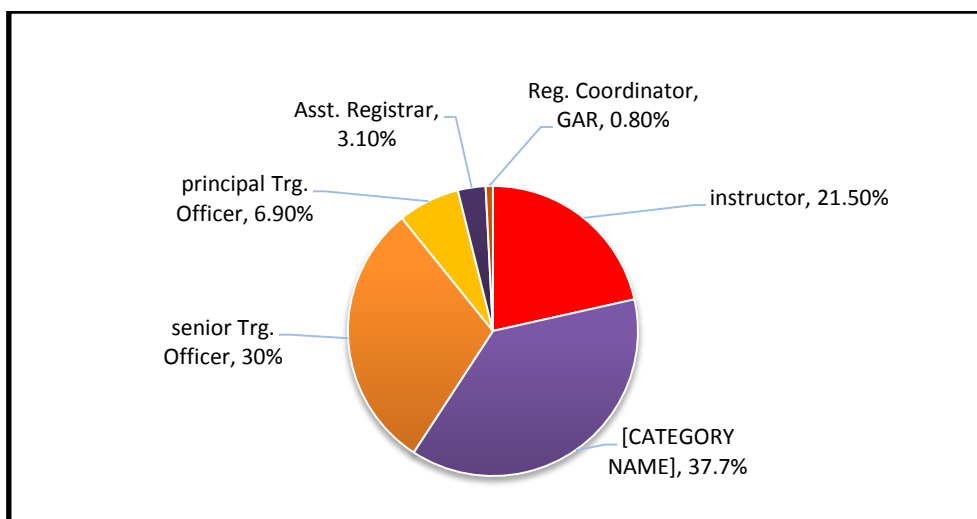


Figure 4.3: Current status of Respondents

(Source: Field Survey, 2018)

4.2.4 Level of Academic Qualification

The questionnaire sought to ask for the highest level of individual respondent's academic qualification ranging from HND/Diploma, Bachelor's Degree, Master's Degree and MPhil/Doctorate Degree as options. Table 4.4 and figure 4.4 indicates that Diploma / HND holders were forty-seven (47) representing 36.2%, Bachelor's Degree holders were sixty-six (66) representing 50.8%, seventeen (17) Master's Degree holders representing 13% of the total respondents whilst MPhil / Doctorate recorded none.

Table 4.4: Level of Academic Qualification of respondents

Level of Education	Frequency	Percent (%)	Cumulative Percent (%)
Diploma / HND	47	36.2	36.2
Bachelor's Degree	66	50.8	87
Master's Degree	17	13	100
MPhil/Doctorate Degree	Nil	0	100
Total	130	100	

Source: Field Survey, 2018

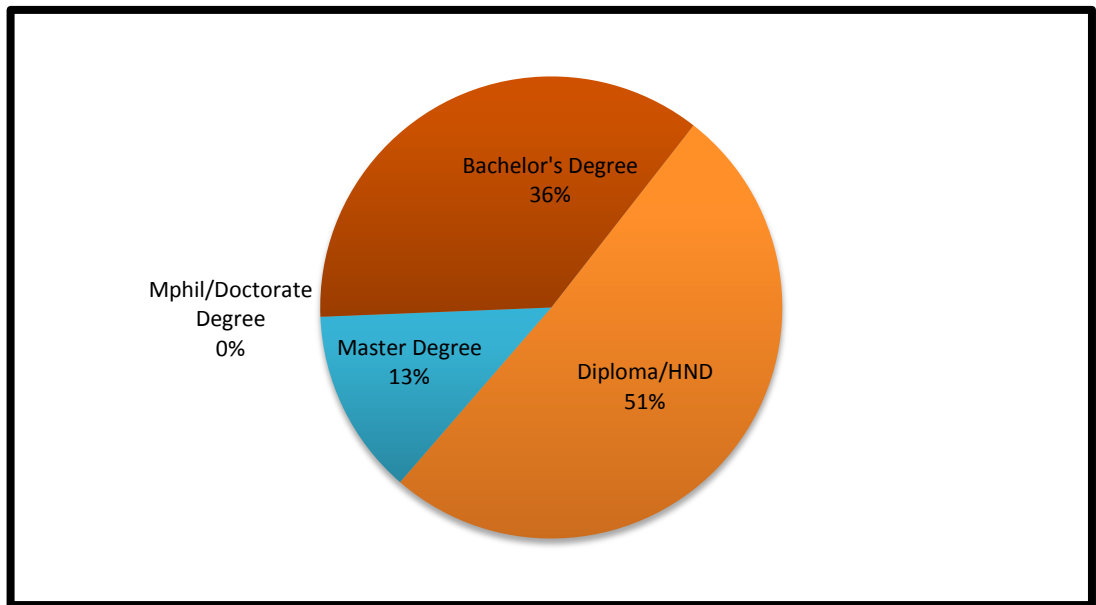


Figure 4.4: Level of Academic Qualification (Source: Field Survey, 2018)

4.3 FACTORS AFFECTING QUALITY ASSURANCE OF TVE DELIVERY IN GHANA

The Table 4.5 is exhibiting knowledge by the respondents about factors perceived to have being affecting quality assurance of TVE delivery in Ghana. A set of ten (10) factors were identified after careful study and were given to the respondents to rank them on the level of agreement using a Likert scale of 1-strongly disagree, 2-Disagree, 3-undecided, 4- Agree and 5-Strongly Agree. The responses however, were ranked by means of Related Important Index (RII) and Mean scores. In all, one hundred and thirty respondents were ranked.

4.3.1 Respondents View on Factors Affecting Quality Assurance of TVE Delivery in Ghana

In the quest of ascertaining factors that affects quality assurance of TVE delivery in Ghana, identified ten (10) variables that could be factors affecting quality assurance of TVE delivery, given to the respondents to rank them using a Likert scale of 1-strongly disagree, 2-Disagree, 3-undecided, 4- Agree and 5-Strongly Agree. The Mean and RII scores of all one hundred

and thirty (130) responds were calculated for each factors and is indicated in the Table 4.5. It came to light that, with the exception of “Lack of employment opportunity for TVE graduates without or less industrial experience with a Mean value of 3.3231; Less patronage of service of industries by the government institutions with a Mean value of 3.0769; and “Non-Patronise of the services of TVE graduates with a Mean value of 2.9846 which are skewed to ‘3’ on the Likert scale meaning Undecided and cannot be factors, the rest seven (7) variables were accepted by the respondents to be potential factors affecting quality assurance of TVE delivery. They are as follows;

4.3.1.1 Lack of common certificate for all TVE graduates / inadequate industries to employ trainees of TVE graduates

“Lack of common certificate for all TVE graduates / inadequate industries to employ trainees of TVE graduates” were found to be the leading factors that affects quality assurance of TVE delivery. They both scored a higher results of Mean score value 4.6231 which is skewed to ‘5’ and RII value of 0.9246 meaning strongly agreed on the Likert scale. In the case of “Lack of common certificate for all TVE, there exists different type of certificate awarding to trainees of TVE graduates from Technical and Vocational Institutions through to Polytechnics in Ghana (Ansah & Ernest, 2013). This turn to confuse the industries who may need their service. Therefore much attention need to be focused on the TVE certification. Inadequate industries to employ trainees of TVE graduates on the other hand, is also a worrying factor in Ghana as a nation. This has necessitated the government to embark on a project dubbed “one district one factory”. A nation without adequate industries to employ its citizenry has its economic growth being affected. Industries have always proved to be a contributing factor of national growth (Kniivilä, 2004) and enhances living.

4.3.1.2 Negative perception about TVE institutions and certificate

Negative perception about TVE institutions and certificate ranked third (3rd) with the mean value of 4.5462 also skewed to '5' and RII of 0.9092. There is no doubt about this revelation since literatures have attest to this fact. In Amedorme & Fiagbe, 2013 it came light that majority of Ghanaian parents have negative perception and doesn't want their wards/children to study in TVE institutions. Many believe that it is for people with academic less endowed and less privilege people in the society. (Government, 2011; Reliance Services, 2012) revealed in Pakistan that, TVET is rated low by the citizenry with the impression that it attracts lower financial benefits in the society. In addition, many of the TVE certificates makes it difficult for its holders to progress or proceed to the higher education (Hughes *et al.*, 2017).

4.3.1.3 Lack of clear academic progression for TVE graduates / Non-provision of Scholarships to teachers and trainees

“Lack of clear academic progression for TVE graduates” and “Non-provision of scholarships to teachers and trainees” were also agreed by the respondents to be factor possible to contribute to the quality assurance of TVE delivery. Both had Mean score value of 4.3538 and RII values of 0.8708 ranked fourth (4th). Meaning acceptance on the Likert scale. Majority of the higher institutions in Ghana accepts results from Senior High School (SHS) for admission. The progression ladder for TVE is too long and time consuming as compared to a graduate from SHS. They writes a number of examinations before reaching the top by the time one from SHS might have completed school. Its frustration led them drop on the way. Hence make it the dead-end (Hughes *et al.*, 2017). It was therefore suggested that government should institutes a scholarship for trainees of TVE to attract recognitions and make less dead-end (Hughes *et al.*, 2017). Scholarship for teachers will let the teacher be on

tracked with the new trend of technologies to enable them provide relevant teaching (Hughes *et al.*, 2017). This will help in training and retraining of the teachers (Etuk, 2011).

4.3.1.4 Lack of support for trainees in acquisition of tools and equipment

Lack of support for trainees in TVE to acquire requires tools and equipment' with Mean values of 4.3462 skewed to '5' and 0.8692 RII value ranked six (6th). TVE training cannot be effective without providing tools and equipment for to practice with. Since the training is practically and hands on oriented (Etuk, 2011). So is important that trainees are supported in the direction of tools and equipment acquisition to aid learning.

4.3.1.5 Non-involvement of industries in drawing quality guidelines for TVE institutions

Non-involvement of industries in drawing quality guidelines for TVE institutions was seen by the respondents as a factor for quality assurance of TVE. A Mean score values of 4.0538 and RII of 0.8108 ranked seven (7th). Industries undoubtedly play an important role in economic growth by providing job opportunities for individuals. However, only individuals that certifies their requirement are considered. In this this regard, it will be prudent for policy makers such as curriculum designers to involve industries to offer inputs. (Anindo, Mugambi & Matula, 2016) assert that involvement of industries will go a long way to influence training of graduate ready for job market.

Table 4.5: Respondents knowledge about factors

FACTORS	Frequency of Ranking					Total	ΣW	Mean	RII	Ranking
	1	2	3	4	5					
Lack of common certificate for all TVE graduates	2	1	1	36	90	130	601	4.6231	0.9246	1 st
Inadequate industries to employ trainees of TVE graduates	2	1	1	36	90	130	601	4.6231	0.9246	1 st
Negative perception about TVE institutions and certificate	2	4	0	39	85	130	591	4.5462	0.9092	3 rd
Non-provision of scholarships to teachers and trainees	1	4	0	68	57	130	566	4.3538	0.8708	4 th
Lack of clear academic progression for TVE graduates	1	4	0	68	57	130	566	4.3538	0.8708	4 th
Lack of support for trainees in acquisition of tools and equipment	1	4	0	69	56	130	565	4.3462	0.8692	6 th
Non-involvement of industries in drawing quality guidelines for TVE institutions.	1	4	7	93	25	130	527	4.0538	0.8108	7 th
Lack of employment opportunity for TVE graduates without or less industrial experience.	3	43	12	53	19	130	432	3.3231	0.6646	8 th
Less patronage of service of industries by the government institutions	3	45	31	36	14	130	400	3.0769	0.6154	9 th
Non-Patronise of the services of TVE graduates	7	52	22	34	15	130	388	2.9846	0.5969	10 th

Source: Field Survey, 2018

4.4 CHALLENGES INFLUENCING QUALITY ASSURANCE OF TVE DELIVERY IN GHANA

For the study to know the challenges bedevilling the quality assurance of TVE delivering, a group of ten (10) variables were put together for the respondents to rank them with the Likert scale of 1- Strongly disagreed, 2- Disagreed, 3- undecided, 4- agreed and 5- strongly Agreed. The Table 4.6 below is exhibiting knowledge by the respondents about set of challenges perceived to have being affecting quality assurance of TVE delivery in Ghana. A set of ten (10) factors were identified after careful study and were given to the respondents to rank them on the level of agreement using a Likert scale of 1-strongly disagree, 2-Disagree, 3-undecided, 4-Agree and 5-Strongly Agree. The responses however, were ranked by means of Related Important Index (RII) and Mean scores. In all, one hundred and thirty respondents were ranked illustrated in the Table 4.6.

4.4.1 Respondents View on Challenges Influencing Quality Assurance of TVE Delivery in Ghana

In order to know challenges that influences quality assurance of TVE delivery in Ghana, a set of ten (10) variables identified to be potential were given to the respondents to rank them using a Likert scale of 1-strongly disagree, 2-Disagree, 3- undecided, 4- Agree and 5-Strongly Agree. The Mean and RII scores of all one hundred and thirty (130) responds were calculated for each variable and is indicated in the Table 4.6. Out of the ten (10), seven came out to be the most challenges influencing the quality assurance of TVE delivery base on their Mean score values compared to the Likert scale.

4.4.1.1 Poor environment and inadequate infrastructure for TVE institutions

Poor environment and inadequate infrastructure for TVE institutions per the respondents is one of the challenges. This was ranked first (1ST) with Mean score value of 4.6231 which is skewed to '5' of the Likert scale that signifies strongly Agreed. And also RII value of 0.9246. According to (Anindo, Mugambi & Matula, 2016), poor environment and inadequate infrastructure influence out of TVE training. This was also echoed by (Etuk, 2011). Therefore, it is prudent that adequate infrastructure as well as conducive environment is provided in all TVE institutions in Ghana.

4.4.1.2 Inadequate training institutions for teachers and students TVE Institutions

Inadequate training institutions for teachers and students TVE Institutions was ranked second (2nd) with Mean value of 4.4077 and RII value of 0.8815 by the respondents. Training institutions plays vital role in breeding qualified teachers as well as graduates. Both (Anindo, Mugambi & Matula, 2016; Etuk, 2011) in their various studies affirmed this opinion. Ghana can only boast of University of Education, Winneba which provides training to TVE teachers. This is not enough to rely on as a nation and conscious effort should be made to increase number of training institutions for training potential teachers for TVE.

4.4.1.3 Inadequate Funding, Planning and Implementation of TVE programmes by government and cooperate bodies.

Inadequate Funding, Planning and Implementation of TVE programmes by government and cooperate bodies would lead to the collapse of TVE. It was ranked third (3rd) by the respondents. It scored a Mean value of 4.2769 and RII value of 0.8554. (Anindo, Mugambi & Matula, 2016), indicated and recommended that stakeholders should come together to complement the effort of government to fund TVE. Planning and implementation on the other hand, (Etuk, 2011) indicate the needs for vigorous attention in order for the government to achieve goals pertaining the pursuance of a set vision for TVE and its economic growth target.

4.4.1.4 Inadequate teaching / instructional materials

Inadequate teaching / instructional materials was also ranked third (3RD) by the respondents with Mean value of 4.2769 which is skewed to '4'. Meaning it is 'Agreed' per the Likert scale and RII value of 0.8554. In fact, teaching without instructional materials is nonstarter. (Ogbuanya & Izuoba, 2015) affirmed that inadequate teaching and instructional materials can go a long way to affects quality assurance in the delivery. Teachers in TVE most of the time improvise in the absence of this important teaching materials. This practice affects quality assurance in their delivery (Ogbuanya & Izuoba, 2015). Therefore, there will be the need to provide adequate teaching and instructional materials to promote effective training requirement (Anon, 2015).

4.4.1.5 Difficulties of Career advancement of TVE graduates

Difficulties of career advancement of TVE graduates also ranked third (3RD) by the respondents with Mean value of 4.2769 which is skewed to '4'. Meaning it is 'Agreed' per the Likert scale and RII value of 0.8554. Difficulties in career advancement of TVE in Ghana is an open secret and is of the numerous challenges facing quality assurance of TVE. A lot of reforms have been place to curb this problem but it still not solved. A parent in study conducted by Tamale polytechnic registered his frustration and said categorically that "none of his children will attend Technical and Vocational school" this according to him was due to difficulties he was facing in getting access to polytechnic (Polytechnic, 2015).

4.4.1.6 Inadequate industries for attachment for teachers and trainees

Inadequate industries for attachment for teachers and trainees ranked sixth (6TH) with Mean value of 4.0462 skewed to '4' of the Likert scale and RII value of 0.8092. TVE is purely practical oriented. This call for intermittent industrial attachment for both teachers and trainees in such institutions. This practice will aid the teachers to acquaint themselves to newly trend which at end will lead to avoidance of training and industrial mismatch (Michael, 2014; Chinyere Shirley, Chijioke & Benjamin Chukwumaijem, 2015). The government should do well to partner potential investors to put in place industries relevant to TVE to ensure quality training.

4.4.1.7 Uses of obsolete tools, equipment and instruments for training

Uses of obsolete tools, equipment and instruments for training' ranked 7TH with Mean score value of 3.8385 skewed to '4' meaning 'agreed' and RII value of 0.7662. This is obvious since training with obsolete tools, equipment, and instruments will make the learner irrelevant to the world of work (Bin, Kamin & Bin, 2013). In this vain relevant and necessary tools, equipment, and instruments should be ensured in the TVE institutions.

4.4.1.8 Lack of proper policy framework for TVE

Response from the respondents indicated that "Lack of proper policy framework for TVE" may not be a challenge since the Mean score value was 3.2462 skewed to '3' on the Likert scale meaning 'undecided' and ranked eighth (8TH) depicts the uncertainty for it to be viable of a challenge. This is because Ghana has had a lot reforms in making sure that TVE is improve (Adams *et al.*, 2015). This as a result gave birth COTVET. That notwithstanding, a kind of attention should be given in order to make sure that TVE training is done in the accordance to existing policy framework.

4.4.1.9 Inadequate experts to formulate TVE policies

Respondents ranked inadequate experts to formulate TVE policies ninth (9TH) with Mean value of 2.9308 skewed to '3' representing undecided and RII value of 0.5862 meaning could not be a challenge per their views. This is probably, the existence of COTVET as a body to ensure TVE delivery in accordance to policies in place. That notwithstanding, the experts are to be on point to ensure that standards are maintained (Akhuemonkhan & Raimi, 2014b).

4.4.1.10 Low Qualification and Commitment of management and teaching staff of TVE Institutions

Low Qualification and Commitment of management and teaching staff of TVE institutions was not decided by respondents to be a challenge to quality assurance of TVE delivery. It was ranked tenth (10TH) with Mean score value of 2.3308 skewed to '2' on the likert scale which means 'Disagreed' and also RII value of 0.4662. This also means that the teachers have the requisite qualification and are committed to training. That notwithstanding, there will be the need to provide refresher courses and when the needs arise. This when done will go a long way to abreast them with time. and also maintain their commitment level.

Table 4.6: Respondents knowledge about Challenges

CHALLENGES	Frequency of Ranking					Total	ΣW	Mean	RII	Ranking
	1	2	3	4	5					
Poor environment and inadequate infrastructure for TVE institutions.	1	0	0	45	84	130	601	4.6231	0.9246	1 st
Inadequate training institutions for teachers and students TVE institutions	2	6	4	61	57	130	573	4.4077	0.8815	2 nd
Inadequate Funding; Planning; and Implementation of TVE programmes by government and cooperate bodies.	0	6	3	70	51	130	556	4.2769	0.8554	3 rd
Difficulties of Career advancement of TVE graduates	0	2	7	74	47	130	556	4.2769	0.8554	3 rd
Inadequate teaching / instructional materials	0	7	5	63	55	130	556	4.2769	0.8554	3 rd
Inadequate industries for attachment for teachers and trainees	0	6	8	90	26	130	526	4.0462	0.8092	6 th
Uses of obsolete tools, equipment and instruments for training.	1	29	4	52	44	130	499	3.8385	0.7662	7 th
Lack of proper policy framework for TVE	6	49	2	3	20	130	422	3.2462	0.6492	8 th
Inadequate experts to formulate TVE policies	7	65	4	35	19	130	381	2.9308	0.5862	9 th
Low Qualification and Commitment of Management and teaching staff of TVE institutions.	23	77	2	20	8	130	303	2.3308	0.4662	10 th

Source: Field Survey, 2018

4.5 QUALITY ASSURANCE BEST PRACTICES OF TVE DELIVERING

In order to ensure Quality Assurance (QA) in the delivery of Technical and Vocational Education (TVE) in Ghana, a group of Ten (10) Best Practices variables perceived to enhance Quality Assurance were put together and respondents were asked to answer them on a Likert scale of **1=Poor; 2= Fair; 3= Good; 4= Very Good and 5 = Excellent**. All One hundred and Thirty (130) respondents answered the questionnaire. The data collected were calculated for a Mean score values (X) for each of the variables and is indicated on the Table 4.7.

4.5.1 Respondents View on Quality Assurance Practices of TVE Delivering

In order to know best quality assurance practices which will aid in ensuring quality assurance of TVE delivering, a set of eleven (11) variables were given to the respondents to respond to them on the Likert of 1=Poor; 2= Fair; 3= Good; 4= Very Good and 5 = Excellent. A Mean score was used in deciding whether a variable should be Accepted or Rejected. A Mean score values of ($X \leq 3$) were not accepted whilst ($X \geq 3.5$) were accepted to be a best practice in achieving quality assurance in TVE delivering. All the questionnaire were answered by the respondents and the outcome indicate general acceptance of the variables and indicated on Table 4.7.

4.5.1.1 Good environment and adequate infrastructure for TVE institutions

From the Table 4.7 below, “Good environment and adequate infrastructure for TVE” is important in TVE delivery with a Mean value of 4.8615. Environment and adequate infrastructure enhances training. This was supported by a previous study findings by (Etuk, 2011) posited that adequate infrastructure and conducive environment is undoubtedly a contribution factor in achieving quality assurance of TVE delivery.

4.5.1.2 Provision of modern tools and equipment and instructional materials for training

Provision of modern tools and equipment and instructional materials for training in TVE institutions can never rule out if TVE delivery being a hands on is to achieve its objectives. This was affirmed in the study conducted by (Etuk, 2011) titled *implementation of vocational education programmes and the reality of vision 2020: the challenges*. Modern tools and equipment means making both the teachers and learners current in regards to the modern trend and also making them relevant to the world of work (Etuk, 2011). Instructional materials on the other hand aid teachers in being on point. Lack of this result in the teacher improvising which according to (Anindo, Mugambi & Matula, 2016) it does not help and was concur by (Ogbuanya & Izuoba, 2015).

4.5.1.3 Provision of single certificate for all TVE graduates in Ghana

Teachers and workers of NVTI suggested there is the need of providing a national one common certificate for all TVE graduates in Ghana. Currently TVE graduate holds different kinds of certificate depending where individuals had their education. There is different certificates from NVTI and GES under Technical Examination Unit also NABPTEX. Nvti is currently have the following certificates; Foundation Certificate; Certificate I; and Certificate II. (Website <http://www.nvtighana.org>.) Whilst GES has Certificate II issued by COTVET (Website <http://www.cotvet.gov.gh>.) In the study conducted by (Educators, 1999) indicated how certificates are sparingly awarded. Hence their responds had a Mean score value of 4.7077 skewed to Likert scale of '5' representing Excellent indicating that it will go a long way to enhance quality assurance in TVE delivery.

4.5.1.4 Providing Opportunity for career Progression for TVE graduates

On providing opportunity for career progression for TVE graduates, the teaching and supporting staff shared the view that it could enhance quality assurance with the with Mean value of 4.6615. Career progression like access to higher education and also getting employment or being self-reliance. This as a result, will make TVE graduates more responsible by way of contributing to the national development (Educators, 1999). This according to will call for policies supported by a political of the nation.

4.5.1.5 Adequate funding, Planning and Implementation of TVET programmes by government and cooperate bodies

Adequate funding, Planning and Implementation of TVET programmes by government and cooperate bodies were also accepted by the respondents to be a practice that could help in ensuring quality assurance hence Mean value of 4.6077 making it one of the possible factors. (Anon, 2008) Affirmed that there would be a need for adequate funding mechanism put in place to ensure quality of delivery. On the other hand, (Bin, Kamin & Bin, 2013) admonished that government and cooperate bodies should partner to outline good plans and its implementation methods of TVE programmes for effective delivery.

4.5.1.6 Management and teaching staff of TVE institutions Committed to training

The finding suggested that, for TVE delivery achieve its objective, the Management and teaching staff of TVE institutions should be committed to training. This statement which scored a Mean value of 4.4538 by the staff of NVTI was stated (Appendix, 2015) of ISO: 9001:2015, that a total and absolutely leadership and commitment is demanded from the institutional staff and management.

4.5.1.7 Requisite High Qualification of the instructional staff

From Table 4.7, the respondents were in full support that TVE delivery would not achieved its quality desirable if the teachers or the instructional lacks Requisite High Qualification. Mean value score of 4.4462 was realize after analyzing. This was affirmed by (Paryono, 2015) in the study *Approaches to preparing TVET teachers and instructors in ASEAN member countries*. He indicated that as a result school of Brunei imitated a move to upgrade the teachers in order to equip them with a requisite high qualification to execute their duties as teachers.it also suggested in (Akhuemonkhan & Raimi, 2015) that capacity building programmes should organized for the teachers of TVE to keep them informed about new changes.

4.5.1.8 Effective supervision and monitoring of TVE institutions by the authorities

The findings gathered from the respondents indicated that Effective supervision and monitoring of TVE institutions by the authorities in charge of TVE delivering is vital. Hence the Mean score value of 4.4077 meaning agreed on the Likert scale. Also posited by (Akhuemonkhan & Raimi, 2015) that supervisory board should make sure that TVE implements a set standards to the latter.

4.5.1.9 High public recognition of TVE certificate

High public recognition of TVE certificate was agreed to be important and needs attention. Mean value of 4.2846 was realized. This was also recommended in the study by (Akhuemonkhan & Raimi, 2015) title *(Impact of quality assurance on technical vocational education and training (Tvet) in Nigeria)* that there would be the need for vigorous sensitization to the general public and that of the policy makers the essence of TVE and its certificate.

4.5.1.10. Adequate institutions for training TVE teaching staff and students

Since it has been accepted that TVE is important and a tool to drive the growth of the economy, it will have to be extended to the masses. This can be achieved when there is enough institutions for training both teachers and trainers for that matter students. The respondents agreed with a Mean score value of 4.2692 and was affirmed by (Etuk, 2011) that Adequate institutions for training TVE teaching staff and students is the order of the day since it is education for everyone.

4.5.1.11 Registration and Accreditation of Training institutions and Qualifications Framework

The respondents were in agreement that Registration and Accreditation of Training institutions and Qualifications Framework will ensure effective, quality assurance in TVE delivery in Ghana. It was Accorded Very Good on the Likert scale with a Mean score value of 4.2077. In (Anon, 2012) it outline the importance of Registering, giving Accreditation to TVE institutions; and have Qualification Framework. This help in putting programmes and training standards in place which will ensure compliance through guidelines. (Idialu, 2013) also posited that it will go a long way to help in maintaining quality assurance of TVE delivery when done regularly.

Table 4.7: Respondents view on Best Practices

No	BEST PRACTICES	1 P	2 F	3 G	4 VG	5 E	X Mean	Decision
1	Good environment and adequate infrastructure for TVE institutions	0	0	5	8	117	4.8615	Accept
2	Provision of modern tools and equipment and instructional materials for training	0	1	4	20	105	4.7615	Accept
3	Provision of single certificate for all TVE graduates in Ghana	0	0	5	28	97	4.7077	Accept
4	Providing opportunity for career progression for TVE graduates	0	0	6	32	92	4.6615	Accept
5	Adequate funding, Planning and Implementation of TVET programmes by government and cooperate bodies.	0	0	6	39	85	4.6077	Accept
6	Management and teaching staff of TVE institutions Committed to training.	0	0	10	51	69	4.4538	Accept
7	Requisite High Qualification of the instructional staff	0	0	11	50	69	4.4462	Accept
8	Effective supervision and monitoring of TVE institutions by the authorities	0	0	13	51	66	4.4077	Accept
9	High public recognition of TVE certificate	0	0	24	40	65	4.2846	Accept
10	Adequate institutions for training TVE teaching staff and students.	0	1	23	46	60	4.2692	Accept
11	Registration and Accreditation of Training institutions and Qualifications Framework	0	0	29	45	56	4.2077	Accept

Source: Field Survey, 2018

 $X \geq 3.5$ Accepted

(Key: P= poor, F= Fair, G= Good, VG= Very Good, E= Excellent)

CHAPTER FIVE

CONCLUSION AND RECOMMENDATIONS

5.1 INTRODUCTION

The study sought to explore factors for ensuring quality assurance practices of Technical and Vocational Education (TVE) delivery in Ghana. Hence been the aim of the research stated in chapter one (1). This was followed by chapter two discussing vividly the literature review of a similar works done on the research topic emphasizing on the factors, challenges and propose possible Best Practices for ensuring quality Assurance in TVE delivering. Chapter Three dealt with the methodology employed for the study emphasizing on the Data retrieving with the aid of structured survey questionnaire. Chapter four on the other hand, analysed and discussed of the data collected. This very chapter five, talks about the overview of the findings, how the aim and the objectives as well as proposed best practices were accepted. The structure of this chapter is as follows; Review of the research objectives; Summary of findings; Contribution to knowledge and industry; Recommendations; Direction for future research; and Limitations of the research.

5.2 REVIEW OF RESEARCH OBJECTIVES

The actual aim of the research is to explore factors for ensuring quality assurance practices of Technical and Vocational Education (TVE) delivery in Ghana. In realizing this aim, three number of objectives were set.

5.2.1 Review of Objective One

To identify factors for ensuring quality assurance of TVE delivering was the first objective. For the achievement of this objective, respondents were asked to rank a group of ten (10) identified factors on the Likert scale of 1-strongly disagreed to 5-strongly agreed base on their knowledge about the stated factors. The 130 respondents from all their indication assert to the fact that the factors are indeed the very ones for ensuring quality assurance of the TVE delivering. Six out of the ten factors Mean values skewed to '5' on the Likert scale signifying strongly agreed. One out of them Mean value was '4' on the Likert scale meaning good and three of them Mean score values were either '3' or towards '3' on the Likert scale, signifying undecided.

5.2.2 Review of Objective Two

The second objective is to identify challenges for ensuring quality assurance practices of TVE delivering. A set of ten challenges were set and respondents were asked to rank them on the Likert scale of 1-strongly disagreed to 5-strongly agreed. One hundred and thirty respondents answered and ranked base on their knowledge on individual challenges. After analysis, it came to bear that the set of challenges put together. Out of the total ten, five (5) of them Mean values skewed to '5' on the Likert scale, meaning they were strongly agreed representing 50%. Two (2) of them had a Mean value skewed to '4' on the Likert scale which is agreed representing 20%. Therefore, between strongly agree and agree, the total percentage was 70% which assumes that they were culpable challenges. However, three of them whilst three of them Mean values skewed to '3' on the Likert scale which is undecided, representing 30% of the response.

5.2.3 Review of Third Objective

The third objective was to propose possible best practices for ensuring quality assurance practices in TVE. Eleven (11) variables were proposed and established. Respondents were asked to rank them on the scale on the Likert scale of 1- Poor to 5- excellent. One hundred and thirty (130) responses were gathered so far with levels of scoring. Taking the Mean values into consideration, seven (7) of the variable's values skewed to '5' on the Likert scale meaning Excellent representing 63.64% with the rest of the four Mean values skewed to '4' meaning Very good representing 36.36% hence, the proposed variables are to be adopted.

5.3 SUMMARY OF FINDINGS

1. A sum total of one hundred and fifty-one (151) questionnaires were expected to be administered and one hundred and thirty (130) responses were retrieved from the respondents representing 86.09%. The respondent's status was; twenty-eight (28) Instructor, forty-Nine (49) of them were Training officer, thirty-Nine were Senior Training officer, nine (9) of was Principal Training officer. Also, four (4) of them were Assistant registrars and one Regional Coordinator, GAR.
2. From chapter 4 indicated on table 4.4, seventeen (17) of the respondents holds Master's Degree representing 13%, sixty-six (66) were Bachelor's Degree holders representing 50.8%, The number of respondents having HND/Diploma were forty-seven (47) which is 36.2% of the respondents. None of the respondents have a background of MPhil/Doctorate.

3. From Figure 4.2, in chapter four, 53 respondents representing 40% have been with NVTI between 6 -10years, followed keen by forty-six (46) respondents representing 35.4% with years between 11 – 15 years, seven (7) of them respondents representing 5.3% have been with the Institute between 1-5 years, 2.8% have worked with the Institute between 16 – 20 years and 20% over 20 years.

5.4 CONCLUSION

The main purpose of the study is to explore factors for ensuring quality assurance practices of Technical and Vocational Education (TVE) delivery in Ghana. TVE is undoubtedly an aspect of education that equips individual or a group of persons with hands on practical skills leading to self-reliance and employment. It enhances socio-economic growth of a nation (Bin, Kamin & Bin, 2013). For TVE delivering in Ghana to achieve its objective, Quality Assurance should be a watch word. The study upon review of literature identified factors and challenges that are bedevilling Quality Assurance of TVE delivery in Ghana. Also possible practice that could help in solving the problem were identified. In view of this, it will call for all stakeholders to put relevant measures and policies in place to make sure that TVE live up to expectations. This cannot be done without having in place, Quality Assurance Framework, Equipping the TVE institutions with the needed tools and equipment relevant to training, funding the programmes of TVE and infrastructure for successful delivery.

5.5 RECOMMENDATIONS

Based on the findings of the research, the following were recommended to help ensure quality assurance of the delivering of TVE in Ghana.

1. Quality Assurance Framework should be put in place and ensured.
2. Good environment and adequate infrastructure for TVE institutions must be provided for TVE institutions by government to help improve QA in training delivery.
3. Modern tools and equipment and instructional materials must be provided for training in all TVE training institutions. This when done, will help the trainees be ready for the job market.
4. Common National accredited and well recognized unify Certificate should be awarded for all TVE graduates to avoid disparities in TVE certifications.
5. Certificate awarded should be able to provide an opportunity for career progression for TVE graduates without difficulties when one decide to proceed for further higher education.
6. Government and cooperate bodies should provide funding for TVE education delivery.
7. Management and teaching staff of TVE institutions should be given incentives to increase their level of commitment to training.
8. Instructional or teaching staff with Requisite Qualification should be allowed to provide training in all TVE institutions. This will enhance quality delivery.
9. Regular and Effective supervision and monitoring to TVE institutions must done regularly by the authorities to ensure consistency and compliance to standards.
10. The institutions that trains TVE teaching staff should be increased.
11. All TVE institutions should be accredited by COTVET.

5.6 RESEARCH LIMITATION

Although the project managed to achieve its objectives, some limitations were noted.

1. Obtaining data on the population through Google form was a challenged citing lack of data and locating out of coverage area of some of the target population.
2. The fear of the view that they would be inputs will be exposed notwithstanding the confidential assurance notice made it difficult to persuade some participants to take part in answering questionnaire.

5.7 FURTHER RESEARCH

For further study, it would be prudent to explore the Risk factors of Technical Vocational Education and Training delivery in Ghana

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APPENDIX 1: LETTER FOR THE STUDY

Dear Sir/Madam,

I am a final year MSc. Project Management student of the Kwame Nkrumah University of Science and Technology carrying out a research on FACTORS FOR ENSURING QUALITY ASSURANCE PRACTICES OF TECHNICAL AND VOCATIONAL EDUCATION (TVE) DELIVERY IN GHANA. I would be grateful if you could provide answers to the following questions. The study is purely for Academic purposes. And all information provided by respondents will be treated confidential.

Yours sincerely,

Evans Darteh

M.Sc. Student

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APPENDIX 2: QUESTIONNAIRES FOR THE STUDY

SECTION A: Demographic

1. Which of the institutions of NVTI do you work?

Pilot Training Institute (PTI) ()

New Century Career Training Institute (NCCTI) ()

Kanda Career Training Institute (KVTI) ()

Construction Machinery Mechanic Training Institute (CMMTI) ()

Tema Industrial Mission Vocational Training Institute (TIMVTI) ()

Head Office ()

2. How many years have you been with the institute?

1 - 5 years ()

6 -10 years ()

11-15 years ()

16 -20 years ()

Over 20 years ()

3. What is your current status?

Instructor ()

Training officer ()

Senior Training officer ()

Principal Training officer ()

Other specify ()

4. What is your level of qualification?

Diploma / HND ()

Bachelor's Degree ()

Master's Degree ()

MPhil/Doctorate Degree ()

other specify

SECTION B: FACTORS AFFECTING QUALITY ASSURANCE OF TVE DELIVERY IN GHANA

5. How will you rank the following factors that affect quality assurance of TVE delivery?

1-Strongly disagree, 2- Disagree, 3- Undecided, 4- Agree, 5- Strongly agree

No	FACTORS	Ranking				
		1	2	3	4	5
1	Negative perception about TVE institutions and certificate					
2	Lack of clear academic progression for TVE graduates					
3	Lack of common certificate for all TVE graduates					
4	Lack of support for trainees in acquisition of tools and equipment					
5	Non-provision of scholarships to teachers and trainees					
6	Inadequate industries to employ trainees of TVE graduates					
7	Non-involvement of industries in drawing quality guidelines for TVE institutions.					
8	Lack of employment opportunity for TVE graduates without or less industrial experience.					
9	Less patronage of service of industries by the government institutions					
10	Non-patronise of the services of TVE graduates					

SECTION C: CHALLENGES INFLUENCING QUALITY ASSURANCE OF TVE DELIVERY IN GHANA

6. How will you rank the following challenges influencing quality assurance of TVE Delivering in Ghana?

1-strongly disagree, 2- Disagree, 3- Undecided, 4- Agree, 5- Strongly agree

No	CHALLENGES	RANKING				
		1	2	3	4	5
1	Poor environment and inadequate infrastructure for TVE institutions.					
2	Inadequate Funding, Planning and Implementation of TVE programmes by government and cooperate bodies.					
3	Low Qualification and Commitment of management and teaching staff of TVE institutions.					
4	Difficulties of Career advancement of TVE graduates					
	Inadequate training institutions for teachers and students TVE institutions					
6	Uses of obsolete tools, equipment and instruments for training.					
7	Inadequate experts to formulate TVE policies					
8	Lack of proper policy framework for TVE					
9	Inadequate teaching / instructional materials					
10	Inadequate industries for attachment for teachers and trainees.					

SECTION D: BEST QUALITY ASSURANCE PRACTICES OF TVE

DELIVERY

In order to ensure quality in TVE delivery in Ghana, it will call for the adherence and adoption of the following best practices.

7. How will you rank the following best quality assurance practices for ensuring quality in TVE delivery in Ghana?

1=Poor, 2= Fair, 3= Good, 4= Very Good, 5 = Excellent

No	BEST PRACTICE	RANKING				
		1	2	3	4	5
1	Good environment and adequate infrastructure for TVE institutions					
2	Adequate funding, Planning and Implementation of TVET programmes by government and cooperate bodies.					
3	Requisite High Qualification of the instructional staff					
4	Effective supervision and monitoring of TVE institutions by the authorities					
5	Registration and Accreditation of Training institutions and Qualifications Framework					
6	Provision of single certificate for all TVE graduates in Ghana					
7	Providing opportunity for career progression for TVE graduates					
8	Provision of modern tools and equipment and instructional materials for training					
9	Management and teaching staff of TVE institutions Committed to training.					
10	High public recognition of TVE and certificate					
11	Adequate institutions for training TVE teaching staff and students.					

Thank for your time and cooperation.