

Towards Quality Technical Vocational Education and Training (Tvet) Programmes in Nigeria: Challenges and Improvement Strategies

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Abstract

Technical Vocational Education and Training (TVET) is widely recognized as a vital driving force for the socio-economic growth and technological development of nations. In achieving the goals and objectives of TVET in Nigeria, the quality of the programme needs to be improved and sustained. The purpose of this study is to ascertain the challenges and improvement strategies of attaining quality TVET programmes in Nigerian tertiary institutions. Four research questions were raised to guide the study and four null hypotheses were tested at 0.05 level of significance using z-test statistics. The survey research design was used and a total 160 registered Nigerian Vocational Association (NVA) members participated in the study. The instrument of data collection was a questionnaire (CSQTVETQ) and data were collected by the researchers. The study revealed the following factors as challenges of attaining quality TVET programmes in Nigeria tertiary institutions: lack of required TVET facilities, poor funding of TVET programmes; poor teaching methods employed by teachers; and poor assessment of TVET students' competency. Also, the study showed that adequate funding; training and retraining of TVET teachers; provision of required TVET facilities; adequate internal and external supervision; and public private partnership are improvement strategies for quality TVET programmes in Nigeria. Thus, it was recommended that the government, stakeholders, policy makers and TVET providers in Nigeria should focus on TVET quality assurance best practices that have worked in countries around the world.

Keywords: TVET, quality, quality assurance, challenges & strategies

1. Introduction

Skills and knowledge are the engines of economic growth and social development of any nation (Goel, 2010), and Technical Vocational Education and Training (TVET) holds the key to training the skilled and entrepreneurial workforce needed for the changing technological workforce (Afeti, 2010). Technical Vocational Education and Training (TVET) is used as a comprehensive term referring to those aspects of the educational process involving in addition to general education, the study of technologies and related sciences, and the acquisition of practical skill, attitudes, understanding and knowledge relating to occupations in various sectors of economic and social life (UNESCO, 2002). According to Mclean and David (2009) TVET is concerned with the acquisition of knowledge and skills for the world of work to increase opportunities for productive empowerment and socio-economic development in knowledge economics and rapidly changing work environment. TVET thus equips people not only with technical and vocational skills, but with a broad range of knowledge, skills and attitudes that are now recognized as indispensable for meaningful participation in work and life.

TVET has numerous goals which vary from countries to countries. In Nigeria, TVET is part of the formal education system incorporated in the three levels of education (primary, secondary and tertiary) with a view to meeting the nation's need for skilled manpower and support the economic state of individual and the nation in general. As qualitative TVET is increasingly recognized as the bedrock of every development, quality assurance therefore is an indispensable process for achieving the national goals in TVET which will in turn lead to the production of qualitative human capital for sustainable national development.

The concept of quality has been one of the most important concepts in contemporary educational terminology (Zelvys, 2004). In terms of general concept, quality is defined by Adebayo, Oyenike and Adesoji (2009) as the ability or degree with which a product, service, or phenomenon conforms, to an established standard, and which make it to be relatively superior to other. According to Adegbesan, (2010) quality is not just a feature of a finished product or services but involves a focus on internal processes and outputs which includes; the reduction of waste and the improvement of productivity.

With respect to education, African Union (2007) stated that quality is a multidimensional concept, embracing all functions and activities of education system, including teaching and academic programmes, research and scholarship, staffing, students, buildings, facilities, equipment, services to the community, academic environment; taking into account national cultural values and circumstances and international dimensions such as exchange of knowledge, interactive networking, mobility of teachers and students, and international research projects. Similarly, Oyebade, Oladpo and Adetoro (2012) opined that quality in education may be considered on the basis of how good and efficient the teachers are; how adequate and accessible the facilities and materials needed for effective teaching and learning are; and how prepared the graduates are for meeting the challenges of life and for solving the social problems.

In TVET, quality is directly related to the achievement of the learning outcomes (knowledge, skills and competence achieved at the end of the learning process) that fulfils the key stakeholders' expectations: - students, parents, employers and community in general (Romanian Ministry of Education, Research, and Youth, n.d.). Continuous enhancement of the quality of TVET system is a key priority to any nation that desires to reap the benefits of this all important aspect of education system.

In order to ensure quality in TVET, it is essential to establish quality assurance (QA) frameworks applying to all aspect of TVET. Globally, the focus today is on strengthening quality assurance at all levels. There is currently a strong move in many countries towards having rigorous, internationally recognized TVET quality assurance process. Many countries have initiated steps for establishment of quality assurance mechanisms keeping in view the provision of TVET. This initiative is tied to the reforms in TVET sweeping round the globe (Kingombe, 2011).

Quality Assurance (QA) is a generic term that can mean different things in different national and regional contexts. In a broad sense, Maajumdar, Khambayat, Tsesoro-Gayondato and Solla (2010) described quality assurance as the process of verifying or determining whether products or services meet or exceed customer expectations. This involves a coordinated quality assurance system, which should be systematic; provide fundamentals of practice; be manageable so that its people will use it; be integrated; and allow scope for individual initiative and professional judgment (Kirkpatrick, 2005).

Quality assurance as applied in education refer to all forms of internal and external quality monitoring, evaluation or review or the systematic review of educational programmes to ensure that acceptable standards of education, scholarship and infrastructure are being maintained (African Union, 2007). According to Tuck (2007) quality assurance in education is the process and procedures for ensuring that qualifications, assessment and programme delivery meet certain standards.

Quality assurance in TVET is the systematic management and assessment procedures adopted by an educational institution or system to monitor performance and to ensure achievement of quality outputs or improved quality (Majumdar et al., 2010). The main actors to quality assurance in TVET are; teachers, the commission for quality assurance and evaluation, school management, school inspectorate, and community (Romanian Ministry of Education, Research, and Youth, n.d.). It can be simply put that any activity that is concerned with assessing and improving the merit or the worth of an intervention in the field of TVET or its compliance with given standards constitutes quality assurance.

In Nigeria educational system, the quality assurance agencies for TVET include the National University Commission (NUC), and National Board for Technical Education (NBTE), National Business and Technical Examination Board (NABTEB). The NUC's roles include the accreditation, monitoring, and evaluation of Universities programmes, infrastructural facilities, teaching and non teaching staff, and instructional materials. On the other hand, the NBTE performed similar task as that of NUC to polytechnics, technical colleges, and other certificate awarding TVET providers.

1.1 Statement of the Problem

Technical vocational education and training (TVET) programmes are designed for people who can profit and progress by it (Okoye & Okwelle, 2013). In order to accomplish these outcomes, quality must be the watchword.

Quality Assurance is a key component of successful internalization, mechanism for building institutional reputation in a competitive local and global arena and necessary foundation for consumer protection (National University Commission, 2007). However, over the years Nigerian TVET programmes are bedeviled with numerous challenges that have been affecting the quality of TVET programmes both in output and input (Afred & Kayoma, 2012; Oganwu, 2011; Okoye & Okwelle, 2013; Onyesom & Ashibogwu (2013); Uwaifo & U.I Uwaifo, 2012). According to these authors, these challenges include inadequate funding of TVET; inadequate infrastructures; poor power supply; shortage of qualified TVET teachers/ instructors; poor supervision of TVET programmes; inadequate curriculum planning and implementation. Various strategies have been put in place to tackle the challenges of quality assurance in TVET in different countries in the World. This cannot be said of Nigeria where quality of TVET is reported to have been marred by several challenges. Quality Assurance is aimed at remedying all aspects of educational programme which include; facilities, instructional materials, teaching and learning processes, examination, school environment and human resources. A situation where indicators and indices of quality assurance may pose as obstacles, need to be addressed. This has therefore informed this study.

The purpose of this study is to examine the challenges and strategies of attaining quality TVET programmes in Nigeria. The following research questions were raised to guide the study:

- 1) What are the students' factors that act as challenges of attaining quality TVET programmes in Nigerian tertiary institutions?
- 2) What are the schools' factors that posed as challenges of attaining quality TVET programmes in Nigerian tertiary institutions?
- 3) What are the government's factors that act as challenges of attaining quality TVET programmes in Nigerian tertiary institutions?
- 4) What strategies can be use to address the challenges of attaining quality TVET programmes in Nigerian tertiary institutions?

The following research hypotheses were tested at 0.05 level of significance:

- 1) There is no significant difference in the mean response of male and female NVA members on students' factors that act as challenges of attaining quality TVET programmes in Nigerian tertiary institutions.
- 2) There is no significant difference in the mean response of male and female NVA members on schools' factors that act as challenges of attaining quality TVET programmes in Nigerian tertiary institutions.
- 3) There is no significant difference in the mean response of male and female NVA members on government factors that act as challenges of attaining quality TVET programmes in Nigerian tertiary institutions.
- 4) There is no significant difference in the mean response of male and female NVA members on improvement strategies for addressing the challenges of attaining quality TVET programmes in Nigerian tertiary institutions.

2. Methods

The descriptive survey research design was used in this study. The researchers considered this design appropriate since no variable was manipulated in this study. The population comprised 160 (130 males and 30 females) registered members of Nigerian Vocational Association (NVA). NVA is a body of professional vocational educators in Nigerian tertiary institutions. No sampling was done, rather all the 160 registered members of NVA were used for the study since the population size was considered manageable.

Data were collected using a structured questionnaire titled "Challenges and Strategies for Quality Technical Vocational Education and Training Questionnaire" (CSQTVETQ) developed by the researchers. The CSQTVETQ was divided into two parts. The first part sought information on selected personal data of the respondents. The second part had sections A, B C and D consisting of 47- items relevant for answering research questions posed in the study. The response format of CSQTVETQ sections were based on a four-point Likert scale pattern of Strongly Agree (SA=4), Agree (A=3), Disagree (D=2) and Strongly Disagree (SD=1).

The instrument was content and face validated by three experts in TVET. As a result of the experts' comments, some items were restructured to produce the final instrument. To determine the reliability of the instrument, twenty (20) copies of the questionnaire were administered twice with an interval of three weeks to vocational educators who were not part of the sample of this study. The test retest method was used to ascertain the reliability of the instrument using Cronbach's Alpha reliability method. The reliability coefficient obtained was 0.89 which was high and above the recommended acceptable value of 0.7 for good reliability (Nunnally, 1978). Therefore, the instrument was regarded as reliable enough for use in data collection for the study.

The researchers during the NVA 2012 International Conference administered the questionnaires to the 160 registered members of NVA and 150 questionnaires were returned (male = 120 and female= 30) which recorded 94% return rate. The mean was used to analyze the research questions, while the z-test was used to test the hypothesis at 0.05 level of significance. Mean values of 2.50 and above were accepted while mean values below 2.50 were rejected. Also, it was decided that where the Z-calculated value was equal or greater than the table Z-value, it indicates significant difference; the null hypothesis is rejected but if otherwise, the null hypothesis is accepted. All statistical analyses were performed with statistical package for social sciences (SPSS) software.

3. Results

3.1 Research Question 1

What are the students' factors that act as challenges of attaining quality TVET programmes in Nigerian tertiary institutions?

Table 1. Mean responses on students' factors as challenges of quality TVET in Nigeria

S/N	Students Factors as Challenges of Attaining Quality Technical Education Programme in Nigeria	Male NVA Member			Female NVA Member		
		Mean	S.D	Remarks	Mean	S.D	Remarks
1	Poor interest to learn	3.72	0.69	Agree	3.50	0.86	Agree
2	Poor entry qualification for TVET programmes	3.63	0.80	Agree	3.33	1.06	Agree
3	Poor reading culture	3.13	0.42	Agree	3.33	0.84	Agree
4	Lack of required learning material such as textbooks	3.40	1.04	Agree	3.03	1.10	Agree
5	Poor parental background	2.53	1.49	Agree	2.83	1.09	Agree
6	Peer group influence	3.66	0.64	Agree	3.40	0.86	Agree
7	Lack of self confidence	3.50	0.81	Agree	3.33	0.99	Agree
8	Examination malpractice	3.48	0.85	Agree	3.30	0.70	Agree
9	Disobedience to school regulation and rules	2.43	1.41	Disagree	2.33	1.47	Disagree
10	Irregular attendance	3.10	1.05	Agree	3.03	1.10	Agree

The result shown in Table 1 revealed that the male and female teachers accepted nine items but rejected one (item 9) as students' factors that act as challenges of attaining quality TVET programmes in Nigerian tertiary institutions. This is in line with the view of Anyanwu (2009) who stated that students can make or mar quality in teaching depending on their attitude to learning. Also, Onachuna and Nwachukwu (2012) agreed with the findings of this study when they reported that the militating factors to quality assurance included examination malpractice and cultism.

3.2 Research Question 2

What are the schools' factors that act as challenges of attaining quality TVET programmes in Nigerian tertiary institutions?

Table 2. Mean responses on school factors as challenges of quality TVET in Nigeria

S/N	School Factors as Challenges of Attaining Quality in Vocational Technical Education Programme in Nigeria	Male NVA Member			Female NVA Member		
		Mean	S.D	Remarks	Mean	S.D	Remarks
11	Poor teaching methods employed by teachers	3.51	1.00	Agree	3.13	1.04	Agree
12	Teachers lack interest to teach	3.39	0.82	Agree	2.60	1.16	Agree
13	Poor research attitude of teachers	3.55	0.70	Agree	3.47	0.51	Agree
14	Negligence to duties	3.17	1.01	Agree	2.03	1.27	Disagree
15	Poor preparation of lesson by teachers	3.23	0.63	Agree	2.77	1.10	Agree
16	Poor use of teaching aids by teachers	3.18	0.75	Agree	2.83	1.09	Agree
17	Poor student - teacher relationship	3.47	1.01	Agree	3.17	1.09	Agree
18	Poor evaluation of students' academic performance	3.04	0.94	Agree	3.00	1.08	Agree
19	Inadequate classroom blocks	2.46	1.16	Disagree	3.03	0.93	Agree
20	Lack of conducive staff offices	3.72	0.70	Agree	3.27	1.08	Agree
21	Inadequate electricity supply	3.29	0.99	Agree	3.37	1.00	Agree
22	Lack of water supply	3.07	1.52	Agree	3.00	1.23	Agree
23	Inadequate workshop spaces	3.51	0.76	Agree	3.27	1.08	Agree
24	Lack of TVET machines and tools	3.35	0.97	Agree	3.50	0.97	Agree
25	Lack of school furniture	2.38	1.44	Disagree	2.30	1.78	Disagree
26	Lack of TVET textbooks	3.90	0.47	Agree	3.57	0.68	Agree
27	Lack of consumable materials	3.51	1.00	Agree	3.13	1.04	Agree
28	Inadequate instructional materials	3.39	0.82	Agree	2.60	1.16	Agree

The result of the analysis presented in Table 2 showed that the male respondents rated high 16 items but rated two items (19, 25) low, while the female respondents rated high 16 items but two items (14, 25) rated below cut off point as school factors that act as challenges of attaining quality TVET programmes in Nigerian tertiary institutions. This finding is in agreement with the findings of Alfred and Kayoma (2012), Idialu (2012), Olagboye (2004), Onoshakpokaiye (2012), Onwuegbu (2012), Singer (2012). They reported that the quality and functionality of vocational education programme have been marred by several school related factors; notably among them include inadequate teaching/learning facilities; paucity of qualified vocational education teachers; poor evaluation process and lack of counseling services schools.

3.3 Research Question 3

What are the government factors that act as challenges of attaining quality TVET programmes in Nigerian tertiary institutions?

Table 3. Mean responses on government factors as challenges of quality TVET in Nigeria

S/N	Government Factors as Challenges of Attaining Quality in Vocational Technical Education Programme in Nigeria	Male NVA Member			Female NVA Member		
		Mean	S.D	Remarks	Mean	S.D	Remarks
29	Poor supervision of TVET programmes	3.84	0.58	Agree	3.50	0.90	Agree
30	Poor provision of instructional materials to TVET institutions	3.73	0.70	Agree	3.57	0.82	Agree
31	Poor provision of facilities in TVET institutions	3.67	0.80	Agree	2.90	0.99	Agree
32	Poor funding of TVET programme	3.68	0.70	Agree	3.33	0.99	Agree
33	Poor curriculum planning of vocational technical education	3.73	0.67	Agree	3.43	0.97	Agree
34	Poor implementation of vocational technical education curriculum	3.40	0.94	Agree	3.53	0.73	Agree
35	Poor welfare packages for vocational technical education educators	2.82	1.21	Agree	2.97	1.27	Agree
36	Poor training and retraining programme for TVET teachers and instructors	2.50	1.36	Agree	3.50	0.94	Agree
37	Poor scholarship scheme for TVET teachers/ instructors	3.37	1.05	Agree	3.40	0.97	Agree
38	Poor curriculum planning and review process by relevant authorities	3.42	0.82	Agree	3.57	0.86	Agree
39	Politicization of employment of staff in TVET institutions	3.71	0.76	Agree	3.73	0.69	Agree

Table 3 revealed that both male and female respondents agreed with all the items as government factors that act as challenges of attaining quality TVET programmes in Nigerian tertiary institutions. This finding is consistent with those of Okoye and Okwelle, (2013), Onachuna and Nwachukwu (2012), Singer (2012), Uwaifo and U.I Uwaifo (2009) who reported among others that poor provision of facilities and equipments; inadequate personnel; poor incentives; poor funding; defect in curriculum content selection, organization, and delivery system; poor implementation of government policy are challenges to the attainment of quality TVET in Nigeria institutions.

3.4 Research Question 4

What improvement strategies can be use to address the challenges of attaining quality TVET programmes in Nigerian Tertiary Institutions?

Table 4. Responses on improvement strategies for attaining quality TVET programmes in Nigerian tertiary institutions

S/N	Improvement Strategies for Addressing the Challenges of Attaining Quality TVET Programmes in Nigerian Tertiary Institutions	Male NVA Member			Female NVA Member		
		Mean	S.D	Remarks	Mean	S.D	Remarks
40	Adequate funding of TVET programmes	3.63	0.80	Agree	3.47	0.51	Agree
41	Training and retraining of TVET teachers/instructors.	3.40	1.04	Agree	3.27	1.08	Agree
42	Adequate provision of required TVET infrastructures and facilities.	3.50	0.81	Agree	3.57	0.68	Agree
43	Adequate internal and external supervision	3.23	0.63	Agree	3.50	0.90	Agree
44	Public private partnership	3.04	0.94	Agree	2.90	0.99	Agree
45	Adequate planning and implementation of TVET programmes by government	3.29	0.99	Agree	3.43	0.97	Agree
46	Adequate provision of instructional materials.	3.35	0.97	Agree	3.00	1.23	Agree
47	Adequate provision of scholarship/grants for TVET teachers/instructors	3.72	0.70	Agree	3.57	0.68	Agree

Table 4 indicate that both male and female NVA respondents rated all the items high as improvement strategies that can be used to address the challenges of attaining quality TVET programmes in Nigerian tertiary institutions. This is in harmony with the views of Anyakwo (2012) and Aworanti (2012) who posited that factors such as adequate and functional facilities, appropriate class size, the right number of qualified and competent TVET educators, appropriate teaching methods/ strategies; and adequate funding will promote the quality of TVET programmes.

Hypothesis 1

There is no significant difference in the mean response of male and female NVA members on students' factors that act as challenges of attaining quality TVET programmes in Nigerian tertiary institutions.

Table 5. Analysis of mean response of male and female NVA members on students' factors challenges of attaining quality TVET programmes in Nigerian tertiary institutions

Group	N	Mean	Std	Df	Zcal	Zcrit	Decision
Male NVA Members	120	3.28	0.48	148	0.689	1.645	Accept
Female NVA Members	30	3.15	0.37				

N=150, df=148, p<0.05, * Accept

The results in Table 5 show that the calculated z-value (0.689) is less than the critical value (1.645) at 0.05 percent level of significance. The null hypothesis was therefore accepted. This implies that there is no significant difference between the mean response of male and female NVA members on students' factors that act as challenges of attaining quality TVET programmes in Nigerian tertiary institutions.

Hypothesis 2

There is no significant difference in the mean response of male and female NVA members on schools' factors that act as challenges of attaining quality TVET programmes in Nigerian tertiary institutions.

Table 6. Analysis of mean response of male and female NVA members on school factors challenges of attaining quality TVET programmes in Nigerian tertiary institutions

Group	N	Mean	Std	Df	Zcal	Zcrit	Decision
Male NVA Members	120	3.26	0.40	148	0.545	1.959	Accept
Female NVA Members	30	3.02	0.26				

N =150, df=148, p<0.05, *Accept

Table 6 shows that the calculated z-value (0.545) is less than the critical value (1.959) at 0.05 percent level of significance, indicating that there is no significant difference between the mean response of male and female NVA members on school factors that act as challenges of attaining quality TVET programmes in Nigerian tertiary institutions. The second null hypothesis was therefore accepted.

Hypothesis 3

There is no significant difference in the mean response of male and female NVA members on government's factors that act as challenges of attaining quality TVET programmes in Nigerian tertiary institutions.

Table 7. Analysis of mean response of female and male NVA members on government factors challenges of attaining quality TVET Programmes in Nigerian tertiary institutions

Group	N	Mean	Std	Df	Zcal	Zcrit	Decision
Male NVA Members	120	3.26	0.40	148	0.545	1.959	Accept
Female NVA Members	30	3.02	0.43				

N =150, df=148, p<0.05, *Accept

Table 7 indicated that the calculated z-value (0.545) is lower than the critical value (1.959) at 0.05 percent level of significance. The null hypothesis was therefore accepted. The implication of the result is that there is no significant difference between the mean response of male and female NVA members on government factors that act as challenges of attaining quality TVET programmes in Nigerian tertiary institutions.

Hypothesis 4

There is no significant difference in the mean response of male and female NVA members on improvement strategies for addressing the challenges of attaining quality TVET programmes in Nigerian tertiary institutions.

Table 8. Analysis of response of female and male NVA members on improvement strategies for addressing the challenges of attaining quality TVET programmes in Nigerian tertiary institutions

Group	N	Mean	Std	Df	Zcal	Zcrit	Decision
Male NVA Members	120	3.39	0.22	148	1.552	1.645	Accept
Female NVA Members	30	3.31	0.26				

N =150, df=148, p<0.05, *Accept

The results in Table8 show that the calculated z-value (1.552) is less than the critical value (1.645) at 0.05 percent level of significance. The null hypothesis was therefore accepted. This implies that there is no significant difference between the mean response of female and male NVA members on improvement strategies for addressing the challenges of attaining quality TVET programmes in Nigerian tertiary institutions. So, it could be said that gender did not divide the opinion of the respondents on the best strategies for enhancing quality TVET system in Nigeria in effort to develop knowledge based workers for the knowledge driven economy

4. Conclusion

TVET is the bedrock to national development. In order to provide TVET programmes that can create impact in the development of human resources who can be the driving force for technological and economic growth of the nation, quality and standard will have to be created. Various factors (students'; school; and government) have been identified as the challenges of attaining quality TVET programmes in Nigeria tertiary institutions. Also strategies for addressing the challenges of attaining quality TVET were identified in this study. As a way forward, a workable quality assurance mechanism and system that will help to foster quality and standard in every aspect (such as input, process, and output) of TVET programmes in Nigeria tertiary institutions is advocated.

Based on the findings of the study, it was recommended that

- 1) The government, stakeholders, policy makers and TVET providers in Nigeria should focus on TVET quality assurance best practices that have worked in countries around the world.
- 2) The government should adequately fund, plan, implement, and manage TVET programmes in tertiary institutions in Nigeria.
- 3) The quality of input TVET programmes must be considered. This can be achieved through the provision of adequate facilities, equipments, consumable materials, and hand tools; provision of qualified TVET personnel; adequate provision of instructional materials; provision of in service training for TVET personnel.
- 4) Provision of scholarship/grants for TVET teachers/ instructors; proper supervision and monitoring of the implementation of TVET programmes by government.
- 5) The introduction of competency based TVET programmes in Nigerian tertiary institutions.

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