REALISTIC QUALITY ASSURANCE FOR TECHNICAL VOCATIONAL EDUCATION AND TRAINING TOWARDS ENHANCED PRODUCTIVITY: LITERATURE REVIEW

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Abstract - A key concern of quality assurance arrangement in technical vocational education and training is to generate trust and enhancing skills acquisition, promoting self-employment and technological development of a nation. It becomes vital that quality assurance remained the front burner for planning a systematic process that provides confidence in services provided by the technical vocational education and training. A literature review procedure was conducted upon a published paper between 2015 and 2020 in outstanding journals. This study contributes to the literature on quality assurance in technical vocational education and training. The operationalize concepts input-process-output tripod was assessed for continuous quality assurance improvement in technical vocational education and training programmes. Also, the target would be achieved through the key quality assurance stakeholders' engagement in technical vocational education and training compatible with technical vocational education and training mission and set objectives. Factors that hinder the realisation of quality assurance in technical vocational education and training and approaches for the realisation of quality assurance in technical vocational education and training were identified and discussed.

Keywords: realistic quality assurance, technical vocational education and training enhanced productivity, literature review

I. INTRODUCTION

Quality assurance has become an important aspect of technical vocational education and training TVET planning and practices over the years (Shirley et al., 2015). This is because of the role TVET plays in human capital improvement and technological advancement for national development (Odo, Okafor, Odo, & Ugwuoke, 2017). TVET provides support for economic growth, poverty reduction and wealth creation amongst societies, andto enhance its productivity, particularly at the context of globalization, government need to ensure effective TVET provision through quality assurance(Kamin et al., 2018; Asadullah, 2019). But, TVET has not been making a significant impact on contributing to the national development as demanded by its objectives in most the developing nations. This is because of inadequate funding which stands as a threat in its implementation. Therefore, TVETsystem failed to produce employable graduates that can create employment, thereby there is needto investigatethe realistic nature of quality assurance in TVET in terms of productivity through literature reviews(Okorafor & Nnajiofo, 2017). Generally, the digitalization of technologies today is spreading into all spheres of life, giving rise to information, knowledge and creativity as raw materials to the society (ILO, 2016; Kromydas, 2017). Also, digitalisation inthe world of work is demanding for better-qualified workers to be in place for the rapid technological changes across the globe(Masino & Niño-Zarazúa, 2016; Kromydas, 2017). To prepare qualified anda good numbers of workforce with the relevant knowledge and technical know-how for the demands of countries' productivity, TVET policy-making has to be informed of the quality assurance throughthe provision of good governance, staffed and resources to attain sustainable TVETcharacterised by relevance, equity and efficiency (Unesco and Commonwealth of Learning, 2017). Above all, the policy implementation which was not adequately practised in TVET in most of the developing nations especially Nigeria has to be enforced through quality supervision, monitoring and evaluation. So that the country can strive to the changesin technologies, to enable its workforce meet the demands of the high-tech industry, and to creating more skilled jobs to attract high-quality investment to the country. Therefore, the demand for TVET, combined with the expansion and diversification of its training system needs to be developed and implementedalongside with associated procedures for quality assessment, monitoring and improvement (Shirley et al., 2015).

However, despite all the achievements of TVET in national development through its objectives, TVET graduates have not received technological progress in many developing nations.This is because of inadequate human and material resources, facilities and infrastructures in the training programmes. As concurred by Oviawe *et al.*(2017), many developing countries lack basic infrastructures and facilities to provide an effective learning environment for TVET training. More so, teachers are posed with problems on how to use new technologies to keep up with the appropriate teaching methods to teach various courses in technical vocational education and training programmes. This is one of the issues of quality assurance's objectives for TVET reforming in developing countries (Paryono Seameo, 2017). In most of the sub-Saharan African especially Nigeria is facing challenges of constant power supply, internet connectivity, computers and other teaching and learning facilities and materials needed of TVET to meet its objectives. Furthermore, the implementation of quality assurance in TVET was never supervised, assessed andmonitored by the providers.Therefore, forthe achievement of realistic quality assurance to ensure inclusive and equitable quality, TVEThas to promote lifelong learning opportunities for societies(Shirley et al., 2015). Quality assurance is a rational and effective mechanism in TVET that addresses inequality, inequity and imbalance as such there is need to examined the realistic nature of quality assurance in TVET. This is to deal with unemployment rate, reduce poverty levels and prepare adequate labour force for the needed labour markets.

Furthermore, from the literature of this study, TVET lack agreement on relevance and effectiveness to address its objectives, thereby need realistic quality assurance as a remedy to enhance its productivity fromthe current unemployment sager in developing countries. In Nigeria like any other countries of the world has established commission and agencies to set up external quality assurance practices. These include the national universities commission NUC, the national board for technical education NBTE and national commission for colleges of education NCCE (Ovbiagele, 2015). These agencies performed supervisory and regulatory functions by accrediting the respective institutions under them and ensure that they conform to the quality standards set (Ovbiagele, 2015). More so, the ineffectiveness of the agencies for ensuring quality in Nigeria institutions especially TVETis evidence to financial misappropriation thathas wrong the practicesto the detriment ofthe quality in the TVET institutions(Akpan, 2014; Asiyai, 2017).Hence, it is only quality TVET that can boost productivity and as welltransforming the society economically, socially and politically. As such, all these efforts indicated that realistic quality assurance is necessary for the value and relevance of TVET in the development of skilled manpower for sustainable economic development. Above all, TVET is an integral means of national development worldwide because of its impacts on productivity.

Therefore, wereview the literatures of realistic quality assurance to enhance productivity in TVET by underpinning system theory ofLudwig Von-Bertalanffy.Because the theoretical lens of isbased on transforming TVET educational system for an attainment of objectives through adequate interrelated elements input, process, learning environment, output and feedback operated as a unit (Lunenburg, 2010; Chikere and Nwoka, 2014). However, the interactionsof the TVET educational system with the interrelated elements produce graduates demanded by the labour market for socio-economic development. Okeke (2019), concurred thatTVET through adequate training materials and facilitiesproduces quality and soundgraduates with adequate knowledge, skills, values and competencies for sustainability and economic growth.

However, the effectiveness of the TVET outcomes and or productscan be measured through the quality standards in terms ofservices in the labour market.Thus, for the realisation of quality assurance in TVET, our literature reviews was guided by four research questions:

   i.   What factors suitable for realistic QA in TVET?
   ii. Can the engagement of the stakeholders influence realistic quality assurance in TVET?
   iii. What factors hinder the realisation of QA in TVET?
   iv. What approaches for the realisation of QA in TVET?

II.   METHOD

The literaturereviews was guided by the Preferred Reporting Items Analysis for Systematic Review and Meta-Analysis (PRISMA) guidelines. The review strategy employed a systematic literature reviews. Systematic literature reviews offer organised and systematic procedures for analysing research studies Lindsay(2011). Moher, Liberati, Tetzlaff, Altman, & Prisma(2010), also explain systematic review as a

process that enable researchers to utilise transparent review procedures to source for, evaluate, analyse, and syntheses the result of relevant research studies. We applied this approach to explore the realistic QA for TVET to enhance productivity and how QA can be assessed and influence by the stakeholders for improvement. We furthermore, sought to answer research questions related to what factors hinder realisation of QA in TVET and approaches to be used for the realisation of QA in TVET.

2.1   Article Sources

Quality assurance is a broad area of study with several aspects of discourse, in this study we wanted to ensure that, data sources reflecting the questions for the reviewsare covered. In the systematic review best practice according to Short(2009), secondary data were collected through review of relevant materials by searching from electronic database Scopus, JSTOR and Google scholars to identified relevant studies. The article papers were identified through a combination of searches, using keywords and terms associated with quality assurance QA. These include quality, assurance, technical, vocational, education, training, productivity, quality assurance, technical education, vocational education, enhance productivity.

Figure 1: Material selection algorithm
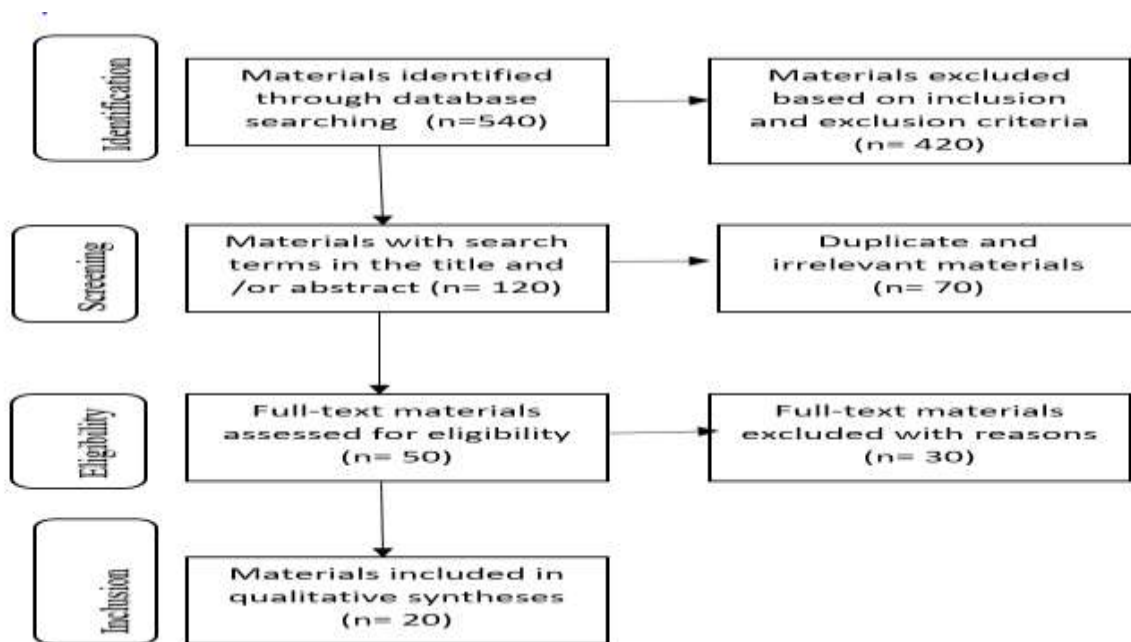
2.2   Article Selection and Screening

The initial search criteria identified 540 resources across the three databases mentioned above. However, applying the screening and eligibility processes as stated in figure 1 above, 50 article papers were identified for full-text retrieval of which 20 article publications were selected and retained, having met the final inclusion criteria for full review and syntheses as shown in figure 1.

2.3   Analysing the Article Publications

The article publications related to each of the guided questions for the literature reviews were syntheses to produce evidence-based conclusions for in-depth information. Thereafter, we provided an explanation for our submissions based on the research questions.

III.   RESULTS AND DISCUSSIONS

3.1   What factors suitable for realistic QA in TVET?

To answer research question 1, we began by analyzing studies that dealt with quality assurance mechanisms by syntheses the suitability of the activities in TVET. This is to improve and ensure quality standards through meeting minimum requirements through inputs, process and outputs of the TVET. Hence, to ensuring quality in TVET, assessment began from the resources of inputs, processes, and

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outputs and in the same way re-appraisal strategy are observed for continuous quality improvement (Gray, Patil & Codner, 2009); Chen & Bonner, 2019). The re-appraisal strategyis to effects defects in TVETsystem to improve its suitability in terms of inputs, processes for quality outputs. Then, if there are adequate input resources in place quality outputs will be guaranteed through effective processes and utilization variably contributes to enhancing productivity as well as socio-economic development.

3.1.1 Quality Assurance Mechanisms

Quality assurance mechanism activities in TVET depends on the existence of necessary mechanisms which are sustained by realistic quality assurance. The mechanisms are internal and external quality assurance.

3.1.2 Internal Quality Assurance Mechanism

This mechanism provides TVET to be responsive in terms of quality standards and principles through monitoring and reviewing by ensuring quality teaching staff, learning environment and adequate resources(Eton et al., 2019).This is with a view to improving and assuring the inputs, processes and outputs of the TVET educational system as minimum standards requirement towards meeting TVET objectives. TVET quality is the process of meeting and processing relevant, sound, and reliable workforce necessary for labour markets and economic development(Bevitt, 2015; Unesco and Commonwealth of Learning, 2017; Rahnuma, 2020). Therefore, quality assurance mechanism in TVET need to ensure assessment activities for appropriate quality standards and operations in inputs, processes and outputs/outcomes. Hence, according to Unesco and Commonwealth of Learning(2017), assessment of TVET quality starts with inputs, process and output/outcome.Thus, we re-appraised inputs-processes-outputs to rationalise and improving assessment of tripod for realistic QA in TVET to ensure continuity in quality improvement. Also, below is re-appraised inputs-processes –outputs for TVET quality assurance.

Inputs	Processes	Outputs
Society	• Societal involvement to define and implement goals of TVET	• Acquisition of societal desires • Competences
Policy	• Adaptability for sustainable skilled development • Democratic policy review for TVET	• Skills • knowledge
Management Framework	• Transparency • Accountability • Participatory • Responsive, • Effective and efficient. • Integrative • Participative management strategies to carry all stakeholders	
Curriculum	• Comprehensive involves knowledge skills and attitudes • Responsive to societal and individuals • Adaptable to changes	
Lecturers	• Quantitatively adequate • Qualitatively professional • Well-motivated to impact • Professional support • Opportunities for self-improvement	
Students	• Quantitatively manage admission to Match staff and facilities ratio • Qualitatively determine by JAMB-UME (entrance examinations) • Monitored skills acquired • Monitored academic work	• Employability skills
Infrastructure	• Qualitative and adequate	

	• Lecture hall, laboratories/workshops, libraries capacities, ICT centre and recreation centre	
	• Lecturer –students' relationship	
Materials	• Quantitatively adequate	
	• Technologically adequate	
	• Curriculum related	
	• Lecturer- students relationship	
Funds	• Adequate fund	
Academic Calendar	• Stable calendar of institutions	

However, inputs and processes are the most essential components of quality assurance, as they are responsible for shaping the learning experiences (outputs/outcomes) (Randall, 2008; Moraga et al., 2019; Moraga et al., 2019). The peer judgments of inputs- processes stand remains as TVET focus on the skills, knowledge and competences of TVET recipients. That is why many national benchmarks for TVET qualifications address skills that are transferable from academic study to the work environment and the community. By the above, the holistic judgment of TVET is made of the effectiveness of processes and utilization of resources about the intended outcomes as well as its appropriateness of the outcomes for socio-economic development(Eton et al., 2019).

3.1.3 External Quality Assurance Mechanism

External quality assurance is the inter or supra institutional schemes of assuring quality in institutions and their programmes (Dill & Beerkens, 2013; Dill, 2018). Its drives include the accreditation of TVET to sureits programmes attain minimum quality standards set to achieve its objectives.(Oviawe, Uwameiye, & Uddin, 2017; Dill, 2018). In Nigeria, quality assurance in TVET is monitored and evaluated by the national board for technical education (NBTE) on different features of qualifications including standards criteria for developing programmes in polytechnics, mono-technics and similar technical institutions. However, according to Kis (2005)and Bakar, Hanafiah, Tun, Onn, & Melaka(2018), external quality assurance criteria identified quality assurance attributes as transparency and accountabilityfor consistency and reliability in the TVET systems to ensure quality standards in learning outcomes.

3.2   Can engagement of the stakeholders influence realistic quality assurance in TVET?

The engagement of TVET stakeholders for realistic quality assurance is an obligation of an individual and or group of individuals withinTVET context to fulfilling TVET mission,goals and objectives(Moodie et al., 2019).Brady & Bates(2016), realistic quality assurance system is not regulatory in the sense of demanding compliance with TVET quality standards,butquality culture enhancement in TVET educational system. This calls for the stakeholders responsibility to contribute to achieving a shared vision and objectives for students learning outcomes (Tikkanen et al., 2019). This quality enhancement can only be achieved when there is collaborative culture based on the trust and sense of ownership with all the stakeholders(Dzimińska et al., 2018). They efforts wouldassuring on the fitting objectives that is being set to achieve TVET objectives. Above that,TVETbeholders must focus on quality assurance to ensure knowledge, skills and competences among TVET graduates to increase productivity in labour market (Moodie et al., 2019; Saruddin, Majid, Bakar, & Ashari, 2018; Schröder, 2019).

However, the process of stakeholders' engagement in making realistic quality assurance in TVET requires self-reflection in developing reflective community. Thereby making staff as the owners of the QA process to response to the challenges for achievement of the aims and objectives of TVET (Itua, 2013; Bakar et al., 2018).Consequently, it is imperative for the stakeholders of TVET to ensure that TVET educational experiences providedshould be sound and relevant for Scio-economic development(Bagale, 2015). In achieving this target, there is need to have effective and efficient structurein TVET systems to monitor the TVET activities to ensuring that they are compatible with the TVET mission and goals to achieving the set objectives.
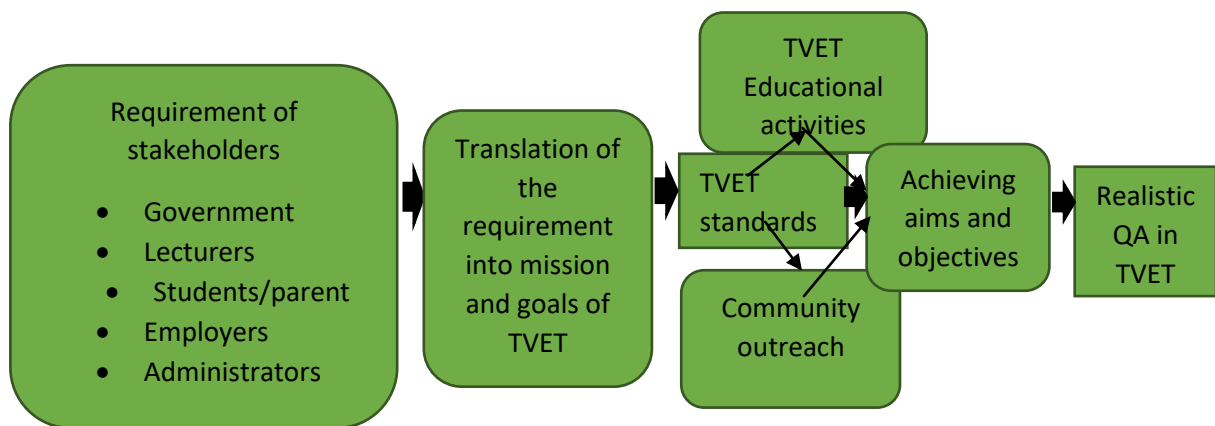
Figure 1: realistic quality assurance framework

3.2.1   Realistic Quality Assurance Engagement in TVET Programmes

Furthermore, technical vocational education and training is considered qualitative, if the study environment have relevant infrastructural facilities, equipment, qualified students admitted and the teachers in terms of qualifications, experience, professional exposure and morale(Sokwane & Adekanmbi, 2019; Okeke, 2019). In addition to the study of Destiny & Onosahwo(2018), services of an electronic library with current textbook, journals, ICT centre, internet connectivity and other reference materials are necessary to improve TVET to effectively participate greatly in the world of work. In line with the evidence ofBakar, Hanafiah, Tun, Onn, & Melaka (2018) andOviawe (2018), TVET is planned programmes that prepare learners for a career that are based on practical activities related to a specific trade and or occupation. Therefore, all TVET stakeholders' hands need to be on the desk in making the desired transformation for ensuring qualitative TVET founded onthe acquisition knowledge, skills and competencies for capacity building and sustainable development(Oviawe et al., 2017). Also, the school industry partnership to be in collaboration with TVET formal education and industrial sector to create an enabling environment for students to acquire hands-on experience, knowledge, skills and appropriate attitude to work (Organisation for Economic Co-operation and Development OECD, 2018). Hence, when synergy is packaged and adhered to and resources are appropriately managed, it will produce the most needed TVET productsthat will enhance productivity (Organisation for Economic Co-operation and Development OECD, 2018).

3.3   What factors hinder the realisation of QA in TVET?

The challenges of the TVET systems on quality standards depends on meeting the labour market's demand in dissemination of innovations and technologies relevant to the demands of the societies and the industries(Pavlova, 2014; Oviawe, Uwameiye, & Uddin, 2017). The following factors are identified as a hindrance against realistic quality assurance in TVET systems.

3.3.1   Politics

It is accepted that polities and education generally is having a relationship because of their influences in establishment, development of TVET educational systems. However, politics deals with struggles and useof power by the political leaders on policies implementationand finances of TVET system. This is because political governing classes are having different ideologies on educational policies. According to (Williams & Al-samarrai, 2019), politics play a significant roles in the TVET patronage-based educational system and implementations due to inadequate financing in achieving TVET objectives. TVET education is regarded as a public goodsOviawe(2018) and Lyon et al. (2018), affirmed that any government in power springs on education promising support and control may participate in shared political activity. However,Oviawe et al.(2017),stated that TVET education systems and policies couldbe well designed, but without adequate level of funding, even the best-designed intervention will not work. By the above, the objectives of TVET was overshadowed by non-implementation of quality assurance guidelines to ensure

the production skills and knowledge and attitude(Adepoju, 2017; Williams & Al-samarrai, 2019). Adepoju (2017) and Oviawe et al.(2017), pointed out that over the years there have been changes in TVET educational policies in developing nations especially Nigeria due to political uncertainty. This has instituted several worriesby the TVET stakeholders on the problem of acceptability of the results of accreditationfrom the respective agencies such as national universities commission NUC, national commission for colleges of education NCCE and national board for technical education NBTE(Oviawe et al., 2017). According to Adepoju (2017), several questions were raised by the stakeholders leave one in doubt as to how effective and efficient TVET practicesdue to lack of trust in the visitation teams of the accreditation exercises such as:

I. Window-dressing- this is a practice where some institutions prepared before the arrival of the accreditation team. Adepoju (2017) and Oviawe et al.(2017), affirmed that some of the institutions acquire or borrow items before the visit of the team to enable them to meet up with the accreditation requirements.
II. Lack of post – accreditation internal assessment team- some institutions did not have internal quality assurance committee to make sure that the recommendation of the accreditation visitation is implemented and where they are not implemented, sanctioned should be placed on the institution(Adepoju, 2017).

Therefore, this distorted practices of measuring TVET quality education affected the quality of TVET.

3.3.2   Lack of Public Support

The role of TVET revolves around the core of practical skills acquisition, knowledge, attitudes and understanding related to the occupation in various sectors of economic and social life. TVET is meant to equip people with the technical and professional skills needed for industrial development(Oviawe, 2018; Schröder, 2019). Quality TVET requires to achieve the right for competence development at various learning venues and lifelong learning. Also, educate people, train professional and certify their competence to stimulate social change (Schröder, 2019; European Commission, 2020). So, TVET programmes are viewed as an engine room for the production of skills and knowledge for the benefits of the recipients for economic growth, yet societies are ignorance of supporting the programme because it is seen as a programme for those who cannot perform in general education. It was also affirmed by Okorafor & Nnajiofo (2017), TVET is an expensive education that lack of political will on the side of funding as suchTVET education was devoiced from its stated objectives. Thereby, parents and other members of the public lose confidence in the quality of TVET.

3.3.3   Poor Implementation of Quality Assurance Policies

Today, with the need for skilled workforce in the world of work, it is necessary to ensure TVET quality and its learners for competency intended(UNEVOC Network, 2019). But most of the teachers and the administrators of the TVET were not committed to their duties and responsibilities due to corruption practices that stands as threat for QA policy implementation.This led to poor political commitment to achieving the goals of TVET due to lack adequate teaching materials, infrastructures, equipment and resources(Bakar et al., 2018).Thus, there is no proper activities for continuous improvement and innovations based on learners' demands.More so, in most of the educational institutions including TVET lack compliance with the law and contribution to society due to mal-practices existed such as sexual harassment of females and extorting money from the male students for the award of marks or grades (Onoyase, 2019). This academic dishonesty in developing nations especially Nigeria is affecting the competency of the learners, so, quality assurance need to be taken seriously for evaluation of TVET processes.

3.3.4   Poor Infrastructure and Learning Facilities

Infrastructures are the structural and non- structural environment of the TVET educational institutions, the notion of infrastructure refers to the basic physical and organizational structures that are needed for the operation of TVET(Omebe, 2015; Norris & Weiss, 2019). The quality of the infrastructural and learning facilities available in any TVET has a great impact on the quality of its outputs. Hence, facilities needed of TVET such as lecture halls, office space for lecturers, laboratories, workshops, ICT computer centres, internet connectivity and its accessories, and other learning materials have to be adequate. Most of the TVET in developing countries is facing decay in the facilities which causes low-quality standards

amongst TVET graduates. Above all, it was a source of unending industrial strike action in Nigeria, which becomes a threat to cultivate the needed skills and knowledge for national development.

3.3.5   Inadequate Financial Resources

Finance is the most essential purchasing power inTVET educational systemsto acquire human and material resources for quality improvement. Quality education is not just a function of funding inputs, but also of prioritisation of existing resources (The Commonwealth Education Hub, 2015). Quality education has many important supply-side factors which include quality curriculum, quality textbooks, quality internet connectivity, and quality teaching-learning materials and environment (The Commonwealth Education Hub, 2015; Ubogu & Veronica, 2018). In Nigeria, the allocation to education as a share of the GDP is quite minimal which resulted from inadequate funding of inputs that led TVET management under stress and strains. Therefore, undermining the provision of knowledge and skills needed of the societies and the industries (Ubogu & Veronica, 2018). Also, the country's financial policies are found to be irrational because it thwarted the efforts of the TVET education sector with low funding of less than 6 percent on the average of its total annual budgetary allocation as against UNESCO's recommended 26 percent benchmark for developing nations(Faboyede et al., 2017; Ziderman, 2018). These financial challenges have led to inadequate inputs – processes to enhanced quality of TVET educationalsystems as well hinders TVET from achieving its objectives in most of the developing nations.

3.4   What approaches for the realisation of QA in TVET?

Quality assurance approaches seek to prevent, detect, and correct problems in the quality of services provided by TVET(Okereke, 2014; Francis Ansah, 2017)). The development of TEVT educational system need to centred on the quality assurance mechanisms to make the training more efficient and competitive (Ansah, Swanzy. and Nudzor, 2017). Based on the sensitivity of quality-related issues, it is necessitated to develop an approaches of QA to ensure quality standards in TVET system(Okereke, 2014). Below are recommended approachesfor ensuringquality of knowledge and skills in the TVET.

3.4.1   Quality Enhancement

Quality assurance is designed to prove and improve the quality of TVET and educational products and or outcomes. TVET quality enhancement are in two ways first, improvement on the effectiveness of the TVET learning experiences of students. Students' learning experiences in TVET depends on the quality curriculum andthe promotion and support for effective learning to maintaining standards and quality improvement (International Labour Organization, 2019). Secondly, improvement in the quality of TVET to adhere to the initiative of quality assurance agencies. Toachieved that, the enrolment of TVET maximum students per human and material resources should be madeavailable to support teaching and learning delivery observed by the quality assurance agencies to ensure quality TVET education system (International Labour Organization, 2019). By this approach, students' admission has to be restricted where an average number of students per teacher will be reduced to a manageable size as specified by the quality assurance body or agencies. This will improve the teacher-student relationship and enhance quality of the graduates.

3.4.2   Academic Staff Recruitment

Academic staff are the most important component among the learning resources and the recruitment should be done throughtransparency and merit-based process(Kirya, 2020). Select applicants who can enactTVET and its mission as well an applicants that are relevant to the programmes offered in TVET(Oviawe et al., 2017). The staff induction programmes are organised to explain the history, mission, quality culture, core value and approved methods of teaching and assessment in TVET for the newly recruited staff. Staff rules and regulations inTVET as regard quality assurance in terms of discharging duties and students' assessment be given to the new staff and the staff need to be dedicated to his/her instructional delivery through competency-based teaching approaches.

3.4.3   Academic Staff Development

Academic staff have to be equipped and supportedby utilizing appropriate pedagogical approaches to enable TVET learners to acquire the expected knowledge and skills(Okolie et al., 2020).Also, be given equal opportunities for persons interested in pursuing career development as this will extend their

teaching capacity in their area of experts. Thus, enhance students' knowledge and skills on the current technological development and also improve staff level of research development.

3.4.4 Quality Audit

Quality audit is the process by which an independent agency or body assures stakeholders on the adequacy and appropriateness of quality standards component set to ensure quality provisions.The quality audit establishes qualitative objectives in TVET through its activities by evaluating the procedures and the processes to maintain quality improvement(Unesco-unevoc, 2017). Quality audit work on the principles to take responsibility for self-evaluation ofan internal quality system subject to proper checking by an external agency or body. In a quality audit, internal quality mechanism of TVET is examined to find out the extent to which it is effective in carrying out its responsibility for the quality assurance provided for the students(Suartini, 2019). However, quality audit is concerned with the evaluation of the effectiveness of the QA system within the TVETto establish(Kumar, 2017):

   i.   appropriate TVEThuman and materials resources to uphold its mission and meet its stated objectives for continuous improvement; and
   ii.   TVET learning outcomes and its effectiveness is to provide knowledge, skills and competency.

3.4.5 Follow-up Procedure after Accreditation

External quality assurance charged with theaccreditationexercisein TVET, follow-up procedures is a report to ensure that the recommendation made against the TVET accredited are properly examined and treated as deemed. This is to make sure that those areas identified during accreditation exercise are attended to assure quality improvement.

3.4.6 Stakeholder Feedback

Quality inTVET education can be evaluated through the learners learning outcomes knowledge, skills and competence. Feedback are opinions from the stakeholders such as students, graduates, employers, state and federal government that could be used as remedy for quality improvement in the TVET's activities. The feedback collected throughperiodic survey for the opinions of the stakeholders ofTVET at regular intervals would improve the quality of the students' output. The feedback will be examined and leveraged on strategic planning purposes for ongoing TVET excellence and quality delivery.

IV. CONCLUSION

Quality assurance in TVET educational systems has been a global problem for developing nations with the increasing interest in quality standards to meet up with industrial labour market demands. Both internal and external quality assurance mechanisms are meant for reviewing and checking quality in TVET. This is to achieve TVET aspirations as well actualising itstechnological development based on the current technology. TVETfrom its objectives, if properly assured can effectively contribute immensely to the development of societies and socio-economic development of a nation. However, all form inputs, processes and outputs are coherent and aligned together to improve the quality of TVET. From the re-appraised input-process –output approaches for TVET quality assurance, process manipulates the inputs for the output,and process is the utilisation of the inputs materials and resources to provide the intended outcomes. Thus, the output provides feedback mechanism to meet the TVET objectives. So, a realistic quality assurance of TVET is achieved through the collective efforts of the TVET stakeholders towards meeting the quality requirements for the realisation of quality in TVET. Above that, for TVET to achieve its objectives and actualised its technological development a realistic quality assurance factors discussed in this study need to be demonstrated.

REFERENCE

1. Adepoju, T. L. (2017). *An Overview of the Existing Quality Assurance Criteria in Nigerian Higher Institutions and Policy Implications An Overview of the Existing Quality Assurance Criteria in Nigerian Higher Institutions and Policy Implications*. *August*.
2. Akpan, C. (2014). *Quality Assurance in Nigerian Universities: The Role of the National Universities Commission*. *March*, 1293–1299.

3. Ansah, F., Swanzy, P. and Nudzor, H. P. (2017). Balancing the Focus of Quality Assurance Frameworks of Higher Education Institutions in Africa: A Ghanaian Con. *Intech*, *i*(tourism), 13. https://doi.org/http://dx.doi.org/10.5772/57353

4. Bagale, S. (2015). *Technical Education and Vocational Training for Sustainable Development*. *1*(1).

5. Bakar, A., Hanafiah, M., Tun, U., Onn, H., & Melaka, U. T. (2018). The Development of TVET Educator Competences for Quality Educator. *Journal of Technical Education and Training (JTET)*, *10*(2), 38–48.

6. Brady, N., & Bates, A. (2016). The standards paradox: How quality assurance regimes can subvert teaching and learning in higher education. *European Educational Research Journal*, *15*(2), 155–174. https://doi.org/10.1177/1474904115617484

7. Chikere, C. C., & Nwoka, J. (2014). The Systems Theory of Management in Modern Day Organizations - A Study of Aldgate Congress Resort Limited Port Harcourt. *International Journal of Scientific and Research Publications*, *5*(1), 2250–3153. www.ijsrp.org

8. Destiny, O., & Onosahwo, T. (2018). University students ' usage of the internet resources for research and learning : forms of access and perceptions of utility. *Heliyon*, *July*, e01052. https://doi.org/10.1016/j.heliyon.2018.e01052

9. Dill, D. D. (2018). Enhancing Academic Quality and Collegial Control : Insights from US Policy on the Ethical Conduct of Human Subjects ' Research. *Higher Education Policy*. https://doi.org/10.1057/s41307-018-0093-9

10. Dill, D. D., & Beerkens, M. (2013). Designing the framework conditions for assuring academic standards: Lessons learned about professional, market, and government regulation of academic quality. *Higher Education*, *65*(3), 341–357. https://doi.org/10.1007/s10734-012-9548-x

11. Dzimińska, M., Fijałkowska, J., & Sułkowski, Ł. (2018). Trust-based quality culture conceptual model for higher education institutions. *Sustainability (Switzerland)*, *10*(8). https://doi.org/10.3390/su10082599

12. Eton, R., Eton, M., Ogwel, P. B., & Mwosi, F. (2019). *Quality assurance policies and instructors ' planning in vocational training institutions in Lango sub Region Northern Uganda Quality assurance policies and instructors ' planning in vocational training institutions in Lango sub Region Northern Uganda*. *February*.

13. Faboyede, S. O., Faboyede, A. O., & Fakile, S. A. (2017). Funding of University Education in Nigeria: Challenges and Prospects. *European Journal of Social Sciences Studies*, 2015–2017. https://doi.org/10.5281/zenodo.1012393

14. Gray, P. J., Patil, A., & Codner, G. (2009). *The Background of Quality Assurance in Higher Education and Engineering Education*. https://doi.org/10.1007/978-1-4419-0555-0

15. International Labour Organization. (2019). *Guidelines for Model TVET Institutions (MTIs)*. *May*.

16. Itua, G. E. (2013). Adequate Funding: A Need for Quality Assurance in Vocational Education. *International Letters of Social and Humanistic Sciences*, *19*, 200–207. https://doi.org/10.18052/www.scipress.com/ilshs.19.200

17. John Randall. (2008). *quality Assurance and Accountability-Why can't they just leave us along?* 1–27.

18. Kamin, Y. Bin, Bin Saud, M. S., Yahaya, N., Al-Rahmi, W. M., Latib, A. A., Ahmad, A., Amin, N. F., & Cartledge, D. (2018). Comparative Analysis of Students Perception on the Relevance of Diploma Certificate in Automotive Engineering to the Industry. *IEEE Access*, *6*, 79129–79137. https://doi.org/10.1109/ACCESS.2018.2883694

19. Kirya, M. T. (2020). Promoting anti-corruption , transparency and accountability in the recruitment and promotion of health workers to safeguard health outcomes. *Global Health Action*, *13*(1). https://doi.org/10.1080/16549716.2019.1701326

20. Kromydas, T. (2017). Rethinking higher education and its relationship with social inequalities: Past knowledge, present state and future potential. *Palgrave Communications*, *3*(1), 1–11. https://doi.org/10.1057/s41599-017-0001-8

21. Kumar, M. S. (2017). *Acade emic Audit a Quality y Assur rance in High er Edu ucatio on Academic Audit and Quality Assurance in Higher Education. 2017 7*, 61–68.

22. Lindsay S. Uman. (2011). Systematic Reviews and Meta-Analyses. *IInformation Management for the Busy Practitioner*, *February*, 57–59.

23. Lyon, T. P., Delmas, M. A., Maxwell, J. W., Bansal, P. T., Chiroleu-assouline, M., Crifo, P., Durand, R., Gond, J., King, A., Lenox, M., Toffel, M., Vogel, D., & Wijen, F. (2018). CSR Needs CPR: Corporate Sustainability and Politics. *California Management Review*, 1–20. https://doi.org/10.1177/0008125618778854

24. Masino, S., & Niño-Zarazúa, M. (2016). What works to improve the quality of student learning in

developing countries? *International Journal of Educational Development*, *48*, 53–65. https://doi.org/10.1016/j.ijedudev.2015.11.012

25. Moher, D., Liberati, A., Tetzlaff, J., Altman, D. G., & Prisma, T. (2010). Preferred reporting items for systematic reviews and meta-analyses : The PRISMA statement. *International Journal of Surgery*, *8*, 336–341. https://doi.org/10.1016/j.ijsu.2010.02.007

26. Moodie, G., Wheelahan, L., & Lavigne, E. (2019). *Technical and Vocational Education and Training as a Framework for Social Justice*. https://www.researchgate.net/profile/Eric_Lavigne2/publication/334376620_Technical_and_Vocational_Education_and_Training_as_a_Framework_for_Social_Justice_Analysis_and_Evidence_from_World_Case_Studies/links/5d264015458515c11c24d29e/Technical-and-Vocationa

27. Odo J.U; Okafor, W.N.;Odo, A.L.&Ugwuoke, C. N. (2017). Technical Education - The Key to Sustainable Technological Development. *Universal Journal of Educational Research*, *5*(11), 1878–1884. https://doi.org/10.13189/ujer.2017.051104

28. Okeke, O. J. (2019). Quality Assurance in Teaching and Learning in Tertiary Institutions in Nigeria. *SSRN Electronic Journal*, *June*. https://doi.org/10.2139/ssrn.2193791

29. Okereke, E. C. (2014). Strategies for Ensuring Quality in the Business Education Programme of Tertiary Institutions in Anambra State. *An International Multidisciplinary Journal*, *8*(32), 321–336.

30. Okolie, U. C., Elom, E. N., Igwe, P. A., & Nwajiuba, C. A. (2020). Improving graduate outcomes Implementation of problem-based learning in TVET systems of Nigerian higher education outcomes. *Higher Education, Skills and Work-Based Learning*. https://doi.org/10.1108/HESWBL-12-2018-0140

31. Okorafor, A. O. & Nnajiofo, F. N. . (2017). *European Journal of Education Studies TVET POLICIES AND PRACTICES IN NIGERIA : WHY THE GAP*. *January 2017*, 612–624. https://doi.org/10.5281/zenodo.494996

32. Onoyase, A. (2019). Prevalence of Sexual Harassment of Female Students of Tertiary Education in Taraba State , North East Nigeria : Implications for Counselling. *International Journal of Higher Education*, *8*(1), 77–83. https://doi.org/10.5430/ijhe.v8n1p77

33. Organisation for Economic Co-operation and Development (OECD). (2018). The Future of Education and Skills: Education 2030. *OECD Education Working Papers*, 23. https://doi.org/10.1111/j.1440-1827.2012.02814.x

34. Ovbiagele, A. O. (2015). Evaluation of Vocational Education in Nigeria : A Review of the Roles of the Regulatory Bodies National University Commission (NUC) The Main Functions of the NUC. *Global Journal of Interdisciplinary Social Sciences*, *4*(3), 16–21. https://doi.org/www.gifre.org

35. Oviawe, J. I. (2018). Revamping Technical Vocational Education and Training through Public-Private Partnerships for Skill Development. *Makerere Journal of Higher Education*, *10*(1), 73–91.

36. Oviawe, J. I., Uwameiye, R., & Uddin, P. S. O. (2017). Best practices in technical education programme for students' capacity building and sustainable development in the 21st century. *Journal of Technical Education and Training*, *9*(2), 57–68.

37. Paryono Seameo. (2017). The importance of TVET and its contribution to sustainable development. *AIP Conference Proceedings*, *1887*(September). https://doi.org/10.1063/1.5003559

38. Pavlova, M. (2014). TVET as an important factor in country's economic development. *SpringerPlus*, *3*(1), 3–5. https://doi.org/10.1186/2193-1801-3-S1-K3

39. Ramalepe, M. L., & Assistant, T. (2015). *International Journal of Humanities Social Sciences and Education (IJHSSE) Meaning and Significance of Moral Purpose : Perspectives of 15 School Managers*. *2*(3), 151–158.

40. Schröder, T. (2019). A regional approach for the development of TVET systems in the light of the 4th industrial revolution: the regional association of vocational and technical education in Asia. *International Journal of Training Research*, *17*(sup1), 83–95. https://doi.org/10.1080/14480220.2019.1629728

41. Shirley, C., Chijioke, P., & Chukwumaijem, B. (2015). *Towards Quality Technical Vocational Education and Training (Tvet) Programmes in Nigeria : Challenges and Improvement Strategies*. *4*(1), 25–34. https://doi.org/10.5539/jel.v4n1p25

42. Short, J. (2009). The Art of Writing a Review Article. *Journal of Management*. https://doi.org/10.1177/0149206309337489

43. Sokwane, L., & Adekanmbi, G. (2019). Exploring the Teaching and Learning Quality Question in Technical Education in Botswana. *International Journal of Adult Vocational Education and Technology*, *10*(2), 25–39. https://doi.org/10.4018/ijavet.2019040103

44. Suartini, T. (2019). Influence Application of Learning Model on Vocational Education Based on

Quality Issurance. *SAGE Open*, *9*(2). https://doi.org/10.1177/2158244019851552

45. The Commonwealth Education Hub. (2015). *Financing Quality Education Discussion Summary* (Issue September).

46. Tikkanen, L., Pyhältö, K., Pietarinen, J., & Soini, T. (2019). Lessons learnt from a large - scale curriculum reform : The reform - related stress. *Journal of Educational Change*, *0123456789*. https://doi.org/10.1007/s10833-019-09363-1

47. Ubogu, R. E., & Veronica, M. O. (2018). Financing Education in Nigeria: Implications and Options for National Development. *World Journal of Educational Research*, *5*(3), 227. https://doi.org/10.22158/wjer.v5n3p227

48. Unesco-unevoc. (2017). *A synthesis of best practices in TVET quality assurance in selected South Asian countries*.

49. Unesco and Commonwealth of Learning. (2017). and Blended Using ICTs and Blended Using ICTs Transforming Learning in and Blended Using ICTs Transforming Learning in Transforming Learning in TVET Transforming Learning in TVET. In *Using ICTs and Blended Learning in Transforming TVET*. http://oasis.col.org/bitstream/handle/11599/2718/2017_Latchem_Using-ICTs-and-Blended-Learning.pdf

50. UNEVOC Network. (2019). *Work-based Learning as a Pathway to Competence-based Education* (1st Editio). Federal Institute for Vocational Education and Training Robert-Schuman-Platz 3.

51. Victoria Kis. (2005). Quality Assurance in Tertiary Education: Current Practices in OECD Countries and a Literature Review on Potential Effects. *Organisation for Economic Co-Operation and Development. Directorate for Education. Education and Training Policy Division*, *August*, 47. http://www.oecd.org/education/skills-beyond-school/38006910.pdf

52. Williams, T. P., & Al-samarrai, S. (2019). *What is the relationship between politics, education reforms, and learning ? Evidence from a new database and nine case studies*.