

COVID-19: THREATS AND THE EMERGING CHALLENGES IN REALIZING THE OBJECTIVES OF TECHNICAL VOCATIONAL EDUCATION AND TRAINING (TVET) IN NIGERIA.

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Abstract

Technical Vocational Education and Training (TVET) is one of the key drivers of national transformation and contributes to the socio-economic development of Nigeria. The sudden outburst of COVID-19 Pandemic led to significant disruption in the educational system in Nigeria. The disruption caused unprecedented gap in the teaching and learning of TVET. Hence the main thrust of this paper is to highlight the issues and challenges TVET education faced during COVID-19 Pandemic. To approach the paper, the concept and objectives of TVET, COVID-19 threat and its effects in education, the challenges as well as the opportunities for TVET in a pandemic era were also discussed. The challenges identified include unpreparedness of TVET institutions in terms of available and functional infrastructure for internet connectivity and other media platforms, readiness of lecturers and instructors in term of acquisition of basic skills for e-learning usages and adaption in pedagogies strategies, the problems of expensive data package, lack of remote skills, unfriendly learning platform were also identified as challenges among the students. It was recommended that all the stakeholders in TVET should work in synergy to improve the effectiveness of on-line learning.

Keywords: TVET, COVID-19 pandemic, Threats, challenges, e-learning.

1.0 Introduction

The fundamental focus of Technical Vocational Education and Training (TVET) is hinged on learning and mastering of specific techniques and the scientific principles underlying those techniques as well as general knowledge, skills and values necessary for national growth and development. Obiyai and Ehimen (2018) stated that TVET is an important vehicle for social transformation, national development and sustainability of economic recovery. Under Nigeria educational policy, one of the key aspirations for TVET is for it to be on an equal footing with other traditional academic fields of study. These opportunities are created to provide more access for students to learn from pre-technical and Vocational education to advanced professional levels in science, technology and engineering across a wide range of institutions.

These efforts as stated by the Federal Government of Nigeria (FGN) (2013) is to train the students to become skilled and semi-skilled workers with an intelligent understanding of the increasing complexity of technology in meeting the needs of the labour market.

TVET Programmes in Nigeria are offered at certificate, diploma and degree levels by various institutions such as monotechnics, polytechnics, colleges of technologies, universities, etc. Regent Business School (2019) explained that the types of courses at TVET institutions are vocational or occupational by nature. This means that the students receive education and training with the view towards a specific range of jobs, employment or entrepreneurial possibilities. TVET is therefore, the key driver in achieving a fully developed and high-income nation by producing skilled workers. To achieve its purpose of training skilled workers, the students of TVET programme are exposed to industrial work experience scheme (ITF, 2016). This skill training programme is made compulsory for all trainees in TVET to enable them meet the needs of employers for qualified competent labour and own needs related to the production of goods and services.

Sadly, the skills acquisition training in TVET was disrupted towards the end of 2019, with the outbreak of COVID-19 pandemic. The global spread of the virus affected the health of hundreds of thousands of people, claimed many lives, disrupted learning process and threatened economics worldwide. International Committee of Red Cross, (ICRC) (2020) described Covid-19 as a threat because it deprives people of their liberty due to lack of economic opportunities, access to health care and education. Following the outbreak of covid-19, also known as coronavirus disease caused by severe acute respiratory syndrome coronavirus which was alleged to have leaked from a laboratory in Wuhan China, the virus rapidly spread to many countries.

The first case in Nigeria was announced on February 27th 2020 when an Italian national in Lagos tested positive for the virus (NCDC, 2020). Subsequent events that followed was the lockdown measures and physical distancing announced by Federal and State governments which had brought big impact and challenges to the education system in Nigeria. Because of the lockdown measure, education suffered a terrible set back, all the schools in Nigeria and many countries including TVET institutions were closed in March 2020 and only began re-opening in October of the same years. Within this period of closure, few schools including TVET institutions shifted to virtual learning (Ebohon, 2021). While virtual/online learning is not completely new in Nigeria, the lockdown occasioned by covid-19 shifted emphasis to the use of online learning. The advent of Information and Communication Technology (ICT) and the internet has greatly influenced the way knowledge is transmitted.

The arrival of online learning or e-learning as an aspect of ICT is faced with many challenges in Nigeria (Ibrahim & Hudu, 2020). The main challenges of implementing online learning for TVET in Nigeria according to Okafor (2018) are development of technology,

infrastructure and human resources. The author further explained that online learning/ e-learning courses require facilities which come with technical requirement such as browser compatibilities, system requirement, strong internet connection and high bandwidth. With the current educational practice and technological development, other online learning integration such as application of software and hardware in online learning, social media networks and webinars are of utmost importance. As the technology is widely adopted in an era of pandemic, all parties are facing many issues and challenges which border on the use of online learning. TVET being the hand-on skills training aspect of education need conventional teaching and learning approach. This is because online learning develops the cognitive aspect of learners ability more than the psychomotor (physical skills) of the learner. The result of these challenges are poor practical skills acquisitions among the trainees and poor achievement among others. The rationale of the paper is therefore to explore the challenges of the threat posed by covid-19 as it affects the effective teaching and learning of TVET courses with the view to proffer solutions.

2.0 The Concept of TVET

TVET is often referred to as the study of technology in which students learn about the processes and knowledge related to technology. As a field of study, it covers human's ability to shape and change the physical world to meet needs by manipulating materials tools with techniques. UNESCO (2015) explained that TVET is understood as comprising education, training and skills development relating to a wide range of occupation fields, production, services and livelihoods. TVET include a wide range of skills development opportunities attuned to national and local contexts. Learning to learn, the development of literacy and numeracy skills, transversal skills. Preparing individual for gainful employment is the main thrust of TVET, as it trains people to acquire basic skills and understanding necessary for employment in a particular occupation. Iliya (2015) expounded that TVET enable individual develop his/her knowledge of science and manipulative endowment in many trades area with the view of equipping them to become artisans, craftsman, technician, engineers and other level of professionals.

The broad spectrum of TVET which any innovation change or modification of natural environment to satisfy perceived human needs and wants and how technology accomplish this through the interacted discipline of mathematics, science, engineering and others (Dugger & Naik, 2021). TVET remains one of the popular means by which trained manpower is produced for economic, productive ventures and industrial growth of both developed or developing countries (Mojekwuet al, 2017), As a vehicle for national development, TVET is a deliberate intervention to bring about learning in designated area of economic activities. According to Ogunde (2017) TVET is designed to meet the complex technological needs of modern industries, knowledge and related industrial information for qualifying persons for useful and gainful employment in trades and industrial pursuit. This definitions and importance of TVET give credence to the fact that the objectives of

the programme is tailored towards national transformation.

2.1 Objectives of TVET

The main objective of TVET is to develop an effective coordinated and harmonized educational system that is capable of producing quality human resource with the right attitude and values required for growth and prosperity of the various sectors of the economy. Ministry of Education Science and Technology Kenya (2016) itemized the specific objectives of TVET to include: (a) To provide adequate and appropriate skilled artisan, craftsmen, technicians and technologists at all levels of the economy through practical skill training and work experience (b) Transfer technology continuously through collaborative approach between TVET institutions and the relevant industries (c) Promote dignity and decency of labour, particularly manual work, (d) Provide increased training opportunities for the increasing school leavers and other trainees to increase employability (e) Provide continuous upgrading of skills and knowledge at the pace and ability of the manpower needs of a dynamic curriculum responsive to the manpower needs of a dynamic economy (g) Impart marketable skills, technical know-how and attitudes that respond to contemporary labour market demands by the industries, informal sector and for self-employment.

Similarly the Federal Republic of Nigeria (2013) also articulated the objectives of TVET to include: (a) To provide human resource in applied technology and commerce, particularly at the sub-professional level (b) To provide technical knowledge and Vocational skills necessary for agriculture, industry, commerce and economic development (c) To provide people who can apply scientific knowledge to the improvement and solution of environmental problems for the use and convenience of man (d) To give an introduction to professional students in engineering and other technologies (e) To give training and impart the necessary skilled personal who will be enterprising and self-reliant and (f) To enable both young men and women to have an intelligent understanding of the increasing complexity of technology. All these stated objectives of TVET point towards the fact that this aspect of education is the most practical avenue for acquiring readily employable skills for the world of work. Nigeria like other developing countries are in dire need of skilled workers. In particular, competent artisans and technicians are needed to fill skills gaps in various sectors of the economy, including building and construction industry, power and energy plants, water distribution and sanitation and large public works (Mojekwu, 2017). As various countries including Nigeria, were making concerted efforts towards the realization of these stated objectives of TVET for national transformation, the 2019 brought in COVID-19 global pandemic.

2.2 Covid-19 Threat and its Effect on Education

Coronavirus also known as Covid-19 outbreak mediated pandemic impacted most

sectors globally. This includes education that consist of millions of enrolled learners and active teachers who previously had regular classes in their institutions but got stuck at home due to pandemic. Outbreak of the virus turned out to be the cankerworm. The study from Gambari (2022) stated that the huge growth the education sector recorded over three decades got stalled by the outbreak of COVID-19. The COVID-19 pandemic broke out following a leakage from a virology laboratory in Wuhan China in December, 2020 and its monumental effect stagnated the education system of the world. Nigeria confirmed her first case of COVID-19 infection in February, 27th 2020 (NCDC, 2020).

In quick response to curtail the spread of the virus, the agency established by the Federal Government of Nigeria named Nigeria Centre of Disease Control (NCDC) under the Ministry of Health in 2011 was reinvigorated and strengthened. The goal of the agency is to protect Nigerians from the impact of communicable diseases through the co-ordination of public health preparedness, surveillance, laboratory and response functions for all infectious diseases. The first confirmed case of COVID-19 in Nigeria also prompted the federal government to establish Presidential Steering Committee (PSC) on COVID-19, formally known as the Presidential Task Force (PTF) on COVID-19 on March 9, 2020 (NCDC, 2020). With oversight from PSC, NCDC leads the national public health in response on COVID-19 in Nigeria. With this synergy, several measures were executed such as compulsory use of mask in public setting, including educational institutions, temporary closure and safe re-opening of schools and other public places as well as compulsory vaccination. The NCDC also rapidly increase the testing capacity in Nigeria by scaling up diagnostic testing of covid-19 nationwide for accessibility (NCDC, 2021). Even with the execution of this proactive measures, more variants such as Delta and Omicron were detected in 2021. As at March 9, 2022, about 254,777 people were infected, 249,209 people were discharged while 3,142 deaths were recorded (NAN, 2022). This compounds the threat posed by the COVID -19 to the education sector.

In Nigeria the closure of educational institutions between March 2020 to September 2020, teaching and learning did not take place in TVET institutions, only few schools shifted to e-learning, this imply that practical skills acquisition did not take place in these institutions. The study from Daniel (2020) stated that covid-19 pandemic disrupted the lives of students in different ways, not only their level and course of study, but also the point they have reached in their programmes. There is no doubt, education sector, particularly TVET in Nigeria suffered a divesting impact of COVID -19 pandemic. From the study of Eze et al, (2022) Nigerian education (with TVET inclusive) suffered set back because it purely adopted face - to- face approach to the teaching and learning. With the emergence of lockdown conditions both teachers and students were helpless about how to continue learning in the face of the pandemic and the result of the disruption are poor learning, unequal access to educational opportunities and poor skills acquisition. The authors posited that the threat posed by COVID-19 has led to poor school enrolment, poor achievement, poor school health, challenges in school assessment and transition.

This sudden disruption in the teaching and learning process has coerced some schools to forfeit a whole academic session because of the unpreparedness to rely on other mode of teaching. After it became obvious that COVID-19 epidemic and quarantine measures will last for a long period, learning process continued in developed countries in a distance mode using online technologies.

Nigeria government quickly embraced the idea and emphasized that teaching should continue using electronic media such as radio, television and e-learning platforms, to allow students learn at home. Some institutions especially the private owned were quick to organize e-learning classes for the students. But in spite of the benefits of e-learning, Gambari (2021) lamented that most of the developing nation including Nigeria are yet to unlock the full potentials of the e-learning which has led to unmask many challenges confronting the education sector from the administrators, teachers, parents and students. The availability of social networking tools such as Facebook, twitter, YouTube, WhatsApp, Google+, Vimeo, skype, etc. can be used to provide guide lines, instruction and structure the learning process using contents prepared to measure stated objectives in response to the threat posed by covid-19 to the education.

However, Saavedra (2020) argued that even with the availability of social network and reasonable access to educational media, both teachers and learners must stay engaged. Maintaining the engagement of the learners is critical. The author further postulated that going to school is not only about learning mathematics and science, but also about social relationship and peer-to-peer interaction. It is about learning to be a citizen and develop opening social skills. This makes it important to stay connected with the school by any means necessary. The mission of all education system is to overcome the learning crisis as being experienced in this pandemic era. The present challenge is therefore to reduce as much as possible the negative impact occasioned by the COVID -19 threat on education. This brings to focus, discourse on the challenges of TVET during pandemic with the view to ameliorate the crisis.

2.3 Challenges of TVET During Pandemic

The COVID -19 pandemic challenged the educators of TVET to adopt to the new norms that required the teaching and learning process to be implemented online. UNESCO-UNEVOC (2020) stated that the ability of TVET institutions to implement online learning/e-learning depends on the capability to adopt curriculum as well as the preparedness of infrastructure such as internet connectivity, devices or media learning platforms and readiness of trainers and trainees for online learning. The study from Yeap et al (2021) stated that it is a big challenge to migrate TVET curriculum to distance and on-line learning because TVET focuses more on practical skills and work-readiness. Practical skills acquired through learning - by- doing, which occurs in school - based workshops and laboratories or through hand - on experience at the workshop. Some practical exercises require the use of specific equipment or materials that make e-learning

approaches a weak substitute to conventional method. The highly practical nature of TVET make e-learning only useful for the theoretical type of subjects, but the practical aspect of TVET need further solutions (Yeap, et al, 2021). This situation is made worse when trainees lackadequate access to ICT and the workshops are closed (Majumdar &Araiztegui, 2020).

Instructors' readiness towards new norm of online learning is another challenge in TVET. Beforethe outbreak of the covid-19, e-leaning was not the preferred method used by the instructors inTVET institutions, this is due to the fact that programme focus more on practical components.The study from UNESCO-UNEVOC International Centre (2020) confirmed the above assertion. The study showed that out of 126 countries sampled, nearly one-third of all the respondents did not use e-learning at all, another one third used e-learning occasionally,17 percent used e-learning regularly and merely 11 percent used it very often. A similar study carried out by Obi et al, (2020) also revealed that some lecturers and instructors of TVET in Nigeria are not familiar with e-learning facilities utilization skills and they require training in basic skills for e-learning. The readiness for e-learning needs to be considered because they needtime to prepare for teaching materials and to improve their Information Technology (IT) skills aswell as online pedagogy and evaluation skills.

The students' readiness towards the new norm of e-learning poses another challenge for the teaching and learning of TVET. Several other challenges related to e-learning faced by studentsinclude: lack of necessary remote skills, require more time to prepare videos, insufficient internet connectivity, and expensive data packages usability of learning platform and student friendly content (UNESCO-UNEVOC, 2020). Students which suffered these problems experienced disruption during lockdown because laboratory – based training and work-based learning either stopped or continued in restricted numbers with strict sanitary measure (ILO, 2020). Certify examination and assessment have also been postponed for TVET students in many countries including Nigeria. Because of the fact that some practical courses could not beconducted well via online during the pandemic led to the extension of the school calendar withsignificant practical modules prolonged. These circumstances may burden TVET students financially.

Other challenges bothering on the effective delivery of TVET during pandemic in Nigeria areepileptic power supply, inadequate software with local content, lack of maintenance culture, among others (Ile & Edokpolor, 2021; Gambari, 2021). Public source of electricity is intermittent and most of the TVET institutions are connected to the national grid. Insufficientpower supply therefore become a major impediment to the adoption of 21st century pedagogy. Apart from epileptic source of power supply, most TVET institutions in Nigeria lack digital resources and do not have access to computer – based telecommunication facilities. The scarcityof educational software that are relevant to Nigeria curriculum has worsen the problems in coping with the crises of COVID-19 in TVET delivery in Nigeria. The issues and challenges as discussed above due to the outbreak of COVID-19 has also provided new opportunities for TVET.

2.4 Opportunities for TVET in a Pandemic Era.

New opportunities are provided for TVET institutions in responding to the crisis occasioned by the outbreak of COVID-19 pandemic. Some of these opportunities are practical proactive measures taken to curtail the spread of the virus. Abdulqadir (2020) stated that amidst the pandemic some Nigerian polytechnics seized the opportunity and came up with highly impactful innovation that were put into immediate use by the public. Some of these are: Kwara State Polytechnic, Ilorin which came up with pedal-operated hand-washing machine (designed and produced (by the Department of Electrical Engineering) and tissue-paper impregnated hand- sanitizer (by Department of Science and Laboratory Technology), Federal Polytechnic Ilaro also engineered the production of ventilator locally, while Federal Polytechnic Nekede and Lagos State University came up with solar-power hand-wash machine.

Other institutions such as University of Ibadan also produced ventilator, face masks among other covid-19 prevention kits and equipment. A framework to explore the potential opportunities for TVET in response to the pandemic as proposed by Majumdar (2020) are classified into three categories: (a) Immediate- an immediate response could mean finding alternatives to continue learning using different online platform to address disruption in the training process. (b) Mid-term- This involves focusing on measure and opportunities that could be taken by TVET institutions for any post- pandemic disturbances. (c) Long-term - These are long time measures of integrating biodiversity, climate change, social justice and global principles in the TVET curriculum.

Another opportunity the COVID -19 crisis provided for education and skills training as explained by Ile & Edokpodor (2021) is the integration of online learning management platform, (OLMP) into the teaching and learning of TVET. The OLMP provides the chances for students to acquire useful skills to confidently pursue entrepreneurial careers and lifelong learning. The opportunities provided by online learning has provided valuable models especially in private TVET programmes to be able to quickly adopt to the unexpected outbreak of COVID -19 pandemic and by implication address the disruptions and anomalies experienced during the pandemic.

3.0 Conclusion and Recommendations.

Based on the issues raised in this review paper, it is clear that the delivery of TVET and the impact of transition from conventional teaching and learning to online learning due to COVID -19 brought a lot of challenges to this aspect of education, From the overview, the institutions, lecturers, instructors and students are not fully ready to migrate to online learning. Some of the institutions lack ICT facilities and epileptic power source, majority of lectures and instructors also lack basic skills in e-learning usage and adaption in pedagogies and strategies in integrating ICT. The students also face the problems of lack

of necessary remote skills, expensive data package, insufficient internet connectivity, etc.

To overcome these challenges all the stakeholders - government, TVET institutions parents and even the students must work together to improve on the effectiveness of online learning. Provider and policy makers (Government) should readily provide steady power supply in TVET institutions and also ensure that facilities and internet packages for student's online learning are made available. TVET institutions can work well for online learning by apply the modules comprising 30 percent theory and 70 percent practical components. Instructors also need training in e-learning usage. The instructors should also provide free learning platform that are user friendly for students under academic supervision of the experts. The telecommunication service providers should also upgrade and improve in their network. The parents should also support and encourage e-learning for their children. This collaboration is necessary for achieving success in e-learning as TVET thrives to conform to the new norm of learning.

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