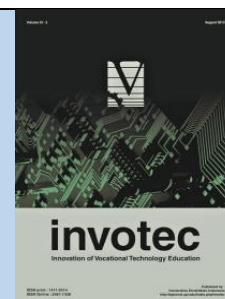




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Rejuvenating Technical Vocational Education and Training Programmes in Polytechnics Amid the Covid-19 Pandemic for Poverty Reduction and Economic Recovery in Nigeria

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ABSTRACT

The study determined the challenges of technical vocational education and training programmes in polytechnics in Nigeria. The study which adopted descriptive survey design used purposive sampling technique to obtain a sample of 518 subjects (consisting of 98 electrical/electronic engineering lecturers and 420 final year students). One research question and one hypothesis guided the study. A 10-item questionnaire titled "Constraints to Effective TVET Programmes in Polytechnics Questionnaire (CETPPQ)", was used for the study. Mean and standard deviation were descriptive statistical tools adopted to analyze the research questions while t-test was the inferential statistics used to test the null hypotheses at 0.05 level of significance. The findings revealed among others that lack of teaching staff, inadequate funding, inadequate training facilities among others modern equipment and tools, defective curricula, poor professional development of staff, poor institution-industry synergy, among others constitute constraints to quality polytechnic education in Nigeria. Consequently, it was recommended among others that government should provide requisite human and material resources needed for quality TVET programmes in Nigerian polytechnics for skill training of technology students.

1. Introduction

1.1 Significance of the main topics

Covid-19 refers to an infectious disease caused by a virus also known as corona virus. Corona virus was not common in the world till December, 2019, when its first appearance was observed in Wuhan, China. Covid-19 is an infectious disease because it can be transferred from a positive carrier of the virus to another who does not have the disease but in close proximity to the affected person. This deadly disease was declared a global pandemic by World Health Organization (WHO) on March

11, 2020, after claiming several lives globally. The severity of covid-19 is more on the economies of most developing nations around the world including Nigeria. Corona virus whose history is traceable to China was first noticed in Nigeria in March, 2020. The disease posed a serious health risk to all Nigerians particularly, the elderly as many of them died from it due to poor immunity. Since the menace of covid-19, the Nigerian economy was adversely affected as most states of the federation declared partial or complete lockdown in their territories resulting in the closure of businesses, markets, schools, mosques and churches. This development brings untold hardship and poverty to many Nigerians as many could not afford the basic necessities of life which are food, clothing and shelter. The pandemic equally affects employment especially in the private sector as most industries were closed, causing loss of jobs which further increase the rate of unemployment.

Unemployment rates in Nigeria as a result of the global pandemic has increased tremendously. According to the Nigeria Employers' Consultative Association (NECA) (2019), the unemployment rate in Nigeria may hit 33.5 % in 2020 from the 23.1% figure recorded in 2019. NECA further reports that lack of employment opportunities and shut down of several industries in Nigeria are reasons for the predictions. Increased unemployment rates in Nigeria indicates poor economic growth and low income generation. Olawale (2019) opines that the Federal Government of Nigeria should take drastic measures to address the menace of unemployment and poverty to enable it recover from its economic downturn so as to reposition itself as the hub of economic activities in West African Sub-region. Similarly, the World Bank (2019) reports that the number of Nigerians living in extreme poverty may increase by more than 30 million in 2030. According to the World Bank, two key factors that can contribute to this increased poverty figure in Nigeria are poverty and unemployment. The World Bank therefore, advises Nigeria to take steps to address the economic challenges in the country to avert any impending unpleasant consequences. Furthermore, the National Social Safety Nets Coordinating Office (NASSCO) (2020) reports that about 9.45 million Nigerians located in 35 states of the federation are poor. These poor people according to NASSCO are located in 43258 communities in 421 local government areas and 4347 wards across Nigeria. Increased rates of unemployment give birth to untold hardship and poverty among many Nigerians and their households amid the global pandemic. Poverty and unemployment which are two monsters causing many Nigerians to go through excruciating situations can be addressed if majority of Nigerians especially the youths are willing to acquire relevant work skills.

Work skills are superior set of technical skills applicable in the industry which enable an employee to be productive in the world of work (Ademu, Adah, & Atsumbe, 2018). Skillful feats demand the application of already acquired knowledge and competence through training to achieving optimistic outcomes including the acquisition of new knowledge. Skills are special attributes possessed by an individual in a given vocation gained through effective training and practice (Samuel, 2017). Harlin et al. (2007) describe skill as any current, visible competence exhibited by an individual to accomplish a scholarly psychomotor action. In the same vein, Lindner and Dooley (2002) define skill as capacity to apply present competence to perform an observable

action or a behavior that results in some observable outcomes. Similarly, Ogbuanya and Bakari (2014) postulate that skill is an individual's capability to control component of behavior, thinking and feeling within specified frameworks and a particular task domain. In the same vein, Okorie (2000) describes skill as the expertness, practical ability, dexterity and tact with which one controls situations in the field of work. Furthermore, Osinem (2008) opines that skill is an individual's capacity to control elements of behaviour, thinking and feeling within specified contexts and within particular task domains to achieve meaningful results at work. Also, Ekezie and Owo (2019) posit that skills comprise special abilities gained through committed learning and practice through quality education and training which enables an individual to be proficient in his work role in any chosen career. A skilled worker is a valuable asset to his organization, employer and other employees as he works meticulously towards the realization of the organizational cardinal objectives. Therefore, skills enable an individual to perform excellently and advance in any chosen career or occupation. Thus, technical or career skills cover any skill sets, knowledge and competencies that can enhance the capacity of prospective employee to secure, retain and progress at work and consequently, find strength to cope with any emerging challenges in any chosen career. Yusuf and Soyemi (2012) report that the acquisition of quality vocational technical skills is fundamental to economic recovery in any country across the globe. Interestingly, these skills which are capable of assuring economic recovery and poverty reduction as well as job creation in Nigeria can be obtained through technical vocational education and training (TVET).

Technical Vocational Education and Training (TVET) as defined by the United Nations Education Scientific and Cultural Organization (UNESCO) in Badawi (2013) is a comprehensive term referring to those aspects of the educational processes involving, in addition to general education, the study of technologies and related sciences and the acquisition of skills, attitudes, understanding and knowledge relating to occupations in various sectors of economic and social life. In the same vein, Adepoju (2014) defines TVET as an educational training which encompasses knowledge, skills, competencies, structural activities, abilities, capacities, and all other structural experiences for securing jobs in the various sectors of the economy or even enabling one to be self-dependent by being a job creator. Furthermore, Raimi and Akhuemonkhan (2014) opined that for Nigeria to meet up with industrialized nations, it must deploy adequate human and material resources into TVET as a viable education orientation to meet up the right skilled manpower need of the industries. Daniel and Hultin (2002) posit that quality TVET enhances the development of individual's knowledge of science and technology in broad occupational areas requiring technical and professional competencies and specific occupational skills. TVET is the type of education that stressed on the application of skills, knowledge and attitude desired for employment in a given occupation or cluster of related occupations in any field of social and economic activity (Oluwale, Jegede, & Olamide, 2013). Thus, TVET essentially inculcates in the individual learner, adequate knowledge, skills and desirable attitudes as well as competences for legitimate work. Technical vocational education and training provides the nation's industrial sector with skilled manpower capable of providing quality

professional services in technology and manufacturing thereby leading to increased Gross Domestic Products (GDP) and overall economic recovery. Kazaure (2018) opines that TVET plays an important role in producing middle level skilled manpower with employable skills required by the production sector which is a fundamental necessity for driving industrial and economic growth. TVET at Higher Education in Nigeria is administered in polytechnics and colleges of technology.

Polytechnics are tertiary institutions established primarily to ensure the skill development of Nigerians for technological advancement. A polytechnic as described by Oni (2007) is an educational system that equips an individual for employment and self-reliance thus provides the necessary skills for agricultural, industrial and commercial roles capable of accelerating the economic development in any nation. Oluwole and Lateef (2015) describe a polytechnic as a non-university, higher institution, entrusted with the responsibility of offering different courses in technical subjects, technology, industrial production, agriculture, commerce and communication together with the provision of knowledge and skills associated with the handling of relevant tools and equipment for the development of students through adequate theoretical and practical experiences. The United Nations Education, Scientific and Cultural Organization (UNESCO) (2002) views polytechnic education as a segment of the general education that prepares individuals for occupational fields and for effective participation in the world of work, life-long learning for responsible citizenship preparation, sustainable development promotion, a best method of facilitating poverty alleviation, and enable individual to develop technical and entrepreneurial skills and attitudes. Polytechnic education is a planned programme of courses that begins with an exploration of career options, support for basic academic and life skills as well as the achievement of higher academic standards, leadership, industrial work preparation and advanced continuing education (Dike, 2009). Thus, polytechnic education involves knowledge accumulation and application which constitute major factors in economic development.

1.2 Previously related studies

Ojerinde (2015) submitted that polytechnic education helps in the preparation of local manpower for the nation's industries, thereby cutting down on over-dependence on foreigners for the industrial development of Nigeria. Similarly, Abdullahi (2018) reports that polytechnic education is targeted at the technological advancement of Nigeria by producing skilled professionals for all aspects of human endeavor. Polytechnics are technology institutions that produce skilled technicians and technologists for the industries (Owo, 2020). Although, the ideals of the Nigerian polytechnic education system as seen in the previous statements of experts are superb as they are all geared towards the economic and technological advancement of Nigeria, the system presently face many challenges such as inadequate funding, poor infrastructural development, inadequate/unavailability of modern training facilities, defective curricula, inadequate teaching staff, poor professional development of staff, weak institution-industry relationship, brain drain due to poor staff welfare among others. In their separate studies, Abdullahi (2018), Kazaure (2018), Okoye and Okwelle

(2013) posit that over the years TVET programmes in Nigeria which are offered in the polytechnics and other TVET institutions suffered major setbacks in the areas of inadequate funding; inadequate infrastructure, poor power supply, shortage of qualified TVET teachers/instructors, poor programme supervision, inadequate curriculum planning and implementation among others. Similarly, Alfred and Kayoma (2012), Onyesom and Ashibogwu (2013), Uwaifo and Uwaifo (2009) posit that TVET system in Nigeria is faced with diverse challenges which affected its progress in diverse perspectives. Kazaure further revealed that these challenges include but not limited to inadequate funding, poor budgetary allocation to TVET, inadequate supply of training facilities to TVET institutions, poor educational planning, poor research and development funding, lack of synergy between TVET institutions and the industries, inconsistent national policy on TVET, lack of private sector involvement among others. All these negative encounters hamper TVET's contributions to the growth of Nigeria's economy. These identified factors and many more serve as constraints to effective polytechnic education in Nigeria whose major aim entails the provision of quality technical vocational education and training services to the nation's industries by offering quality training in engineering technology, applied sciences and management sciences leading to the production of skilled technicians and technologists (Owo, 2020).

1.3 Purpose and research gap of the study

Therefore, in as much as the main essence of polytechnic education in Nigeria is to bring about the development of middle level indigenous manpower needed for the improvement of the nation's industries through the acquisition of lifelong skills relevant to their chosen professions in line with the demands of the labour market, thereby supporting the country in its quest to achieve economic recovery, there is need to revitalize TVET especially in polytechnics in Nigeria through adequate funding, increased industrial training of students through effective institution-industry ties, engagement of quality teaching staff in right quantities, improved staff welfare schemes, adequate provision of modern training facilities, infrastructural up-grade, continuous professional development of lecturers, periodic review of instructional curricula, among others. Owo (2018) reports that the availability and adequacy of educational resources in the Nigerian polytechnics will undoubtedly lead to the production of skilled manpower which will help the country to meet its industrial needs. In the same vein, Ekundayo (2008) opines that poor funding of tertiary education in Nigeria has crippled academic achievements of many students. Energizing TVET in Nigeria therefore, becomes essential if the nation must recover from its economic downturn amid the prevailing life-threatening covid-19 pandemic which cripples economic and industrial activities around the world. This causes poverty and untold suffering among Nigerians to upsurge. The perceived menace of TVET's institutional inefficiency to fight poverty and unemployment through quality skill training of students informed the researchers' quest to conduct this study entitled "Rejuvenating Technical Vocational Education and Training Programmes in Polytechnics Amid the covid-19 Pandemic for Poverty Reduction and Economic Recovery in Nigeria".

The main purpose of the study is to seek for ways of rejuvenating TVET programmes in polytechnics amid the covid-19 pandemic for poverty reduction and economic recovery in Nigeria. Specifically, the study sought to determine the constraints to effective TVET programmes in polytechnics impeding poverty reduction and economic recovery in Nigeria.

1.4 Research question

What are the constraints to effective TVET programmes in polytechnics impeding poverty reduction and economic recovery in Nigeria?

1.5 Hypothesis

There is no significant difference between the mean responses of polytechnic electrical/electronic engineering lecturers and final year students on the constraints to effective TVET programmes in polytechnics impeding poverty reduction and economic recovery in Nigeria.

2. Methods

The study adopted descriptive survey design. A descriptive survey as defined by Nwankwo (2016) refers to the study in which the researcher collects data from a large sample drawn from a given population and describes certain features of the sample as they are at the time of the study and which are of interest to him without altering any independent variable of the study. The study was carried out within the Niger-Delta region of Nigeria. The study population was 2068 (248 lecturers and 1820 final year students). Purposive sampling technique was used to select 98 electrical/electronic engineering lecturers and 420 final year students from Ken Saro-Wiwa Polytechnic, Bori, Captain Elechi Amadi Polytechnic, Rumuola, Port Harcourt, Rivers State and Federal Polytechnic Nekede, Imo State, all located in Niger-Delta, Nigeria. Thus, the study has a sample of 518 subjects. One research question was posed by the researchers to guide the study. Likewise, one null hypothesis tested at 0.05 level of significance was formulated by the researcher to guide the study. A 10-item questionnaire titled "Constraints to Effective TVET Programmes in Polytechnics Questionnaire (CETPPQ)" designed by the researchers on a 5-point Likert's scale was used to elicit data from the respondents. The CETPPQ was face and content-validated by two experts in electrical/electronic engineering technology from Federal Polytechnic, Ekowe, Bayelsa State and Measurement and Evaluation from Rivers State University, Port Harcourt, Nigeria. The reliability of the instrument was ascertained by administering three pilot tests to 62 subjects (14 polytechnic lecturers and 38 students) from Captain Elechi Amadi Polytechnic, Rumuola, Port Harcourt who were not take part of the study and an average reliability coefficient of 0.87 was obtained via Pearson's Product Moment Correlation (PPMC) proving that the instrument was reliable. The questionnaire was distributed to the respondents by the researcher and two other research assistants who also help to retrieve same after duly filled by the respondents. Mean and

standard deviation were descriptive statistical tools adopted to analyze the research questions while t-test was the inferential statistics used to test the null hypotheses at 0.05 level of significance. For the research questions, the decision was based on the criterion mean of 3.00. Thus, any item whose mean value is 3.00 and above will be accepted while any item having a mean value lower than 3.00 will be rejected. Standard deviation values wide apart show homogeneity in the responses of the respondents. For the hypotheses, if the calculated value of t (t_{cal}) is greater than the table value of t (t_{crit}), the hypothesis will be rejected; whereas, if the calculated value of t (t_{cal}) is less than the table or critical value of t (t_{crit}), the hypothesis will be accepted.

3. Results

The results were presented in accordance with the research question and hypothesis as follows:

Table 1. Constraints to effective TVET programmes in Nigerian polytechnics

S/N	Item Statement	Lecturers			Students		
		\bar{X}_1	SD ₁	Decision	\bar{X}_2	SD ₂	Decision
1	TVET programmes in Nigerian polytechnics experience short supply of teaching staff (lecturers).	3.98	0.81	Agree	4.16	0.83	Agree
2	TVET programmes in polytechnics are underfunded by Government.	4.08	0.93	Agree	3.98	0.94	Agree
3	The curricula of TVET programmes in polytechnics are defective.	3.76	0.65	Agree	4.27	0.88	Agree
4	TVET programmes of polytechnics in Nigeria experiences lack of institution-industry synergy.	4.38	0.74	Agree	4.42	0.77	Agree
5	TVET programmes in most Nigerian polytechnics are run with outdated training equipment and tools.	4.26	1.11	Agree	4.26	0.73	Agree
6	TVET programmes of polytechnics are not adequately supervised by appropriate authorities for quality assurance.	3.22	0.97	Agree	4.10	0.69	Agree
7	Poor continuous professional development of lecturers in polytechnics adversely affects the quality of services rendered.	4.48	1.08	Agree	3.94	1.11	Agree
8	Poor/inadequate usage of student-centred teaching strategies by lecturers negatively affects the skill development of TVET students.	2.91	0.87	Disagree	4.21	0.91	Agree
9	Manu lecturers in polytechnics do not take part in applied scientific and technological research to discover new innovations and applications in the field of technology education.	2.98	0.79	Disagree	4.34	0.67	Agree
10	Government's failure to constitute National Polytechnic Commission is a major constraint to polytechnic education in Nigeria.	4.08	0.85	Agree	4.56	0.94	Agree
Grand mean and SD		3.82	0.88		4.22	0.85	

Source: researchers' field survey, (2020).

Table 1 revealed that the lecturers agreed that all the items are issues militating against effective TVET programmes in Nigerian polytechnics except items 8 (2.91) and 9 (2.98) in which they displayed differing views on the matter. This was observed in the mean responses of the lecturers on the stated items which are all above the criterion mean of 3.00. Standard deviation values ranging from 0.65 to 1.11 indicated homogeneity in the lecturers' views. Similarly, the students agreed that all the items stated in Table 1 represent constraints to effective TVET programmes in Nigerian polytechnics. This was obvious in the mean values of all the items as they fall above the criterion mean of 3.00. Standard deviation values far and wide apart indicated closeness in the opinion of the students.

Table 2. T-test analysis of electrical/electronic engineering lecturers and students on constraints to effective TVET programmes in Nigerian polytechnics

GROUP	N	\bar{X}	SD	Df	t-cal	t-crit	Decision
Lecturers	98	3.82	0.88	516	-4.08	1.96	Accepted
Students	420	4.22	0.85				

Source: researchers' field survey, (2020).

Table 2 showed that the calculated value of t, (t-cal= -4.08) was less than the critical value of t, (t-crit=1.96). This implies that the null hypothesis which stated that there is no significant difference between the mean responses of polytechnic electrical/electronic engineering lecturers and final year students on the constraints to effective TVET programmes in polytechnics impeding poverty reduction and economic recovery in Nigeria, is upheld.

4. Discussion

The finding of the study according to Table 1 revealed that lack of teaching staff, inadequate funding, unavailability of modern equipment and tools, defective curricula, poor professional development of staff, poor programme supervision, poor institution-industry synergy, poor instructional techniques and poor regulatory framework are some of the constraints to effective Technical Vocational Education and Training programmes in Nigerian polytechnics.

From the finding, it was evident that most TVET institutions in Nigeria lack teaching staff. Without adequate qualified academic staff capable of facilitating quality teaching and learning, it will be very difficult if not impossible to provide training in requisite employability and entrepreneurial skills. This finding corroborates the views of Adeyemi (2008), Ibebietei and Nanighe (2014), Igberadja (2015), Osarenren-Osaghae and Irabor (2012), and Suleiman (2016) who posit that most technical programmes in Nigerian polytechnics suffer dearth of competent teaching staff.

Similarly, the finding indicates that inadequate funding of tertiary education in Nigeria by government was seen as a major threat to quality TVET programmes in Polytechnics. This finding

agrees with Adegbenjo (2007) who opines that Nigerian polytechnics lack adequate funding for their numerous capital-intensive programmes and consequently, poses an adverse effect on quality teaching, learning and research in the polytechnics. In the same vein, Emmanuel, Adike, & Opigo (2018) and Kazaure (2018) report that incessant poor funding of tertiary education in Nigeria calls for urgent attention to remedy the situation if the nation must experience economic recovery. Without, proper funding, the management of TVET institutions will not be able to provide regular power supply, other consumables as well as funding research and development in technology institutions (polytechnics).

Likewise, the finding further reveals that most technical institutions in Nigeria lack training facilities such as basic tools, equipment and machines needed for quality skill training of students. Poor provision of technical equipment, device and tools would hinder the skill development of students. Since TVET aims at inculcating work skills in the learners, these equipment and tools are very necessary for skill development of students.

This finding agrees with Bello and Shu'aibu (2013), Edobor (2007), Kazaure (2018), Miller (2011), Umunadi (2009), Uwaifo and Uwaifo (2009), who in their various studies report that training facilities in most technical and vocational institutions in Nigeria are grossly inadequate.

Correspondingly, the finding indicates that poor regulatory framework adversely affects the quality of polytechnic education in Nigeria. This finding was supported by Abdullahi (2018) and Kazaure (2018) who posit that governments' failure to constitute the National Polytechnic Commission (NPC) whose duty would have been solely to oversee the activities of polytechnic education in Nigeria is a major constraint to the administration of TVET in Nigerian polytechnics. A specialized body for polytechnics is more preferred to the existing National Board Technical Education (NBTE) who presently oversees the activities of all technical institutions including polytechnics in Nigeria. This will guarantee quality assurance in Nigerian polytechnic education.

Again, the finding of the study shows that lack of institution-industry relationship affects TVET quality in Nigeria. This finding corroborates the views of (Abdullahi, 2018; Bashir, 2018), that poor institution-industry synergy adversely affects the quality of programmes in Nigerian polytechnics. This implies that the polytechnics and the industry (labour market) are not on the same page when it comes to the technological development of the students. Industrial training which forms part of the educational curricula of polytechnics are not jointly monitored and supervised by both the lecturers and industrial supervisors to making sure students acquire the requisite skills during their industrial attachments. This is a major issue affecting polytechnic education in Nigeria. Poor linkage between institution and industry is a major threat to TVET in Nigeria (Kazaure, 2018).

The finding also reveals that poor instructional delivery strategies and methods by TVET lecturers in Nigerian polytechnics when teaching technical courses constitutes another issue affecting the quality of TVET in polytechnics. This finding agrees with Okwelle and Owo (2018a,b) and Owo (2020) that failure of TVET lecturers to adopt more of student-centred teaching strategies such as collaborative learning, problem-based learning and industrial visitations among others in the

teaching of technical and engineering courses is one of the factors affecting the skill development of students as this can hinder the development of employability skills of the students thereby making them to lack jobs upon graduation.

The finding of the study discloses that polytechnic TVET curricula are defective as they are not being designed to meet the present skills needs of the industry. This finding equally supported the views of Kazaure (2018) who submits that the curriculum of technical education in Nigeria is weak and not adequately implemented which led to the production of technical personnel lacking practical competence in their areas of specializations. The curricula which serve as a guide revealing what a given academic programme can offer in terms of theoretical and practical contents needs to be properly designed because if the course contents are not meeting the demands of the labour market, the end products (students) would not be relevant in the industry as they would be deficient in the required work skills and this would lead to unemployment, poverty and frustration. It is therefore, imperative for curricula planners to redesign the curricula in line with the skill demands of the industry since TVET is meant to supply the local industry skilled workforce required for employment generation, poverty reduction and economic recovery.

Therefore, if polytechnics are to function optimally in the task of producing skilled TVET personnel to meet industrial needs in Nigeria, there is need for all these identified factors working against its progress to be addressed with a view to achieving employment generation, poverty reduction and economic recovery in Nigeria.

5. Conclusion and Suggestions

Technical Vocational Education and Training (TVET) in Nigeria is associated with numerous challenges. These challenges need to be addressed to improve on the overall quality of technology education programmes in the country. Thus, to achieve results in this regard, governments at all levels should provide adequate, funding, training facilities and qualified teachers for all TVET programmes to boost their effectiveness and efficiency towards the technological advancement of the nation.

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