

**SPECIALIZED TECHNICAL EDUCATION TRAINING
FOR GRADUATES' PRODUCTIVITY, EMPLOYABILITY
AND EMPLOYMENT GENERATION IN POST COVID-19 ERA**

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Abstract

Unemployment is one of the major concern for citizens in Nigeria, most especially graduates from *different disciplines and professional trainings*. *The level of unemployment seems to have increased to an extent that the government do not have ideal solution to it or an effective means of dealing with it among many nagging issues beclouding the country and requiring urgent attention. The era of COVID-19 has established more challenging demands and requirements which rather makes some who were gainfully employed to lose their jobs, thereby increasing the level of unemployment in the country. A more specialized, designed and focused technical education training seems to be a more realistic route to be depended upon in an attempt to come out of the present unemployment predicament which the country is presently facing. In line with the foregoing, this paper focuses on and review relevant literatures on specialized technical education training for graduates' productivity, employability and employment generation in post-covid-19 era. The paper x-ray unemployment and increasing levels of criminality in the country, general Technical and Vocational Education and Training (TVET), specialized technical education training, employment generation in post-covid-19 era among other important related issues. The paper concluded that that graduates of different disciplines and professional areas could benefit from preferred specialized technical education training with employability skills and improved productivity but more importantly, relevant knowledge for solving societal problems and thereby provide legitimate incomes and career life in the absence of white collar jobs.*

Keywords: Technical and Vocational Education and Training; Specialized Technical Education Training; Employment Generation; Employability, Covid-19, Post-COVID Era;

Introduction

Unemployment is real in Nigeria and it is a major problem of concern to the citizens, most especially graduates from different disciplines. The present level of unemployment in the country seems to have exceeded the extent which the government can ideally find solutions to (Charity, BigBen, Emeka & Benedict, 2021). There are numerous challenges facing the country at the moment which requires urgent attention. Some of the leading problems ravaging the country ranges from economic downturn in the country with constant devaluation of Nigerian currency, banditry and insurgency, protests and agitations for restructuring or division of the country, academic staff union of universities' unmet demands, doctors refusal to work because of unpaid entitlements, health deterioration and deaths among citizen with the explosion of different waves of corona virus, among many others (Ibikunle, Orefuwa & Mafo, 2019).

The era of COVID-19 has established more challenging demands and requirements in relation to unemployment experience in the country. There are extinctions or closures of some growing small scale businesses (Robert, Kenneth Huanan, 2020). Also, some of the private organizations, industries and some government agencies rather makes some individuals who were previously gainfully employed to lose their jobs because of inability to meet up with the new major challenges and situations, thereby increasing the level of unemployment in the country. The post COVID-19 era has heralded new waves of employment requirements and

technological skills whereby individuals can work remotely (Robert, Kenneth Huanan, 2020). Notably, new set of skills are added to the previous requirements for gainful employment which makes the contest for fewer employment opportunities more difficult for job seekers (Glory, 2021). However, not all previous employees could meet this new skill demand and hence, they may actually be at disadvantage and eventually may lose their jobs and add to the list of unemployed in the country (Gene, Paul, Isaac & Emma, 2021). Invariably, the level of unemployment is unlikely going to reduce with unfolding events world over and Nigeria specifically if required steps are not taken to make life easy for the citizen in the country.

A more specialized and focused technical education training seems to be a more realistic route to be depended upon in an attempt to come out of the present unemployment predicament which the country is presently facing. Although, education may merely be provision of information from trainer to learner but Technical and vocational education and training (TVET) requires practical educations for learners to be able to perform required tasks (Majid & Razzak, 2015). Hence, individuals can be well equipped with requisite skills for job creation and personal business enterprises. Therefore, over-dependence on white collar jobs can be reduced while skilled individuals could transform their expertise into business ventures that will fetch them legitimate incomes. Hence, creation of new jobs and possible employments of other unemployed graduates.

COVID-19 Era and Economic Consequences

Covid-19 is the latest world emergency which has several consequences on different aspects of individual lives, countries and the world at large. Studies established evidences of pandemic such as corona-virus with varying human experiences such as loss of lives, hardship and sufferings, economic challenges among others (Wren-Lewis, 2020; Chi-Wei, Ke, Sana & Zubaria, 2021). The economic consequences of the recent COVID-19 pandemic have severe implications on varying groups with existing vulnerabilities been exposed and inequalities entrenched (Umar, Xu & Mirza, 2020).. Moreover, many of those with more limited means and protection, such as workers in informal employment or in diverse work arrangements, unemployed individuals among others have been the least able to face the consequences of the crisis (International Labour Organization, 2020).

The pandemic is causing massive damage to the informal economy and the situation for young and unemployed graduates in this vulnerable sector is even more worrisome. Youths generally have been hit hard by school closures and the closing down of entry-level jobs in the labour market as well as internships and apprenticeships (ILO, 2020). High and persistent youth unemployment and underemployment is the aftermath of the global pandemic and also shows that the young people may likely lose touch with the present labour market or become marginalised in informal and precarious jobs, re-connecting them with good jobs can be very hard with potentially long-lasting scarring effects (Chi-Wei, Ke, Sana & Zubaria, 2021). Moreover, job and income losses have been particularly severe for employed individuals. Apart from individuals' risking exposure to the coronavirus, the increased burden of unpaid care brought by the crisis has particularly affected even the employed (Wren-Lewis, 2020). Invariably, the unemployed with much higher difficult experiences may be forced into unthinkable criminal involvement as means of survival in the absence of legitimate work or gainful employment.

Unemployment and Increasing Levels of Criminality in Nigeria

Unemployment is one of the major challenges in Nigeria today. With hundreds of thousands of graduating students from the higher institutions in the country every year and an abundance of natural and human resources, the rate of unemployment is increasing at an alarming rate daily. Literature hinted that tertiary institutions in Nigeria produces up to 500,000 graduates every year (Kazeem, 2016; Oluwaleye, 2021). Moreover, there are Nigerian graduates

who study abroad and return home to compete for jobs (Kazeem, 2016). In line with the above, several agencies in Nigeria receives more than enough applications for advertised positions. The experience is usually the same from one private organization to another which established far limited job opportunities for the number of graduates turned out from Nigerian institutions on yearly basis. For example, Oluwaleye (2021) reported that “The federal tax agency in November, 2016 received 700,000 applications for 500 advertised positions. In May also, nearly a million people applied for 10,000 listed positions in the Nigerian Police Force”.

Statistics across the globe established that Nigeria is among the top countries of the world that is bathing with high unemployment rate. For instance, Voice of America (2018) indicated that the unemployment situation in Nigeria has officially increased to 16 million with a predicted 2 million addition at the end of the year of report. Furthermore, the National Bureau of Statistics (NBS) in Nigeria, according to Kazeem (2017), reported an increase in unemployment level from 13.9% from the third quarter of year 2016 to 14.2% in the last quarter of the same year. In addition, the Trading Economics in 2019 presented that unemployment rate in Nigeria increased from 22.70% to 23.10% between the second and third quarters of the year 2018. Invariably, the rate of unemployment in the country is constantly on the rise from one quarter of the year to another. Invariably, this alarming rate of unemployment increase in the country comes with many detrimental effect among which is emergence of varieties of crimes and criminal groups which threatens the national security.

Crime in Nigeria has become a very troubling and concurrent scenario on daily basis. There seems to be no day there criminal activities are not reported with lives and properties been continually damaged as a result of criminal attacks. Some of the criminal activities that are prevalent in Nigeria society include burglary, kidnapping, rape, pilfering, internet scam, robbery, social media crimes, car theft among many others that features in the daily news (The Punch, 2019; Oluwaleye, 2021). These activities are usually linked by scholars with joblessness or unemployment (Ajaegbu, 2012; Jelilov & Ndanitsa, 2015). Hence, among the perpetrators of daily reported crimes in Nigeria are unemployed graduates who are expected to be gainfully employed, productive citizen with positive contributions to both the national and economic development of the nation. Specifically, Ajaegbu (2012) ascertain that lack of opportunities for social advancement and employment are some of the root causes of crime and violence. Although, there are possible means of effectively reducing the level of unemployment and accompanying criminal activities but those solutions are not presently managed in a more efficient ways. For instance, technical and vocational education and training (TVET) is a viable tool which possesses characteristics and possibilities for increasing job creation and reducing unemployment experiences among graduates.

Technical and Vocational Education and Training (TVET)

Technical and vocational education and training (TVET) is a composite term that incorporates vocational and technical education. TVET is a form of education designed to equip the learners for gainful employment. Butterfield (2000) described TVET as any educational programme organized to orient people into skills acquisition, and as well as teach them the attitude and knowledge necessary for the appropriate utilization of such skills. It is education designed to develop specific occupational skills. Expects of the educational process involving, in addition to general education, the study of technologies and related sciences and the acquisition of practical skills, attitudes, understanding, and knowledge relating to occupations in various sectors of economic and social life. Meanwhile, Alhasan and Abdullahi (2013) termed Technical and Vocational Education and Training as that part of education that provides the skills, knowledge and attitude necessary for effective employment in specific occupation. Moreover, according to the Federal Republic of Nigeria (2004), the goals of technical and vocational education are to: provide trained manpower in the applied sciences, technology and business particularly at craft, advanced craft and technical levels; provide the technical

knowledge and vocational skills necessary for agricultural, commercial and economic development; and give training and impart the necessary skills to individual who shall be self-reliant economically.

The goals of TVET is an indication that the program is expected to deliver related technology and science to various economic, social and cultural sectors. Invariably, TVET is a type of education with mechanisms that establish necessary skills for obtaining special jobs and professions. In line with this assertion, the UNESCO-UNEVOC (2006) identified the following items as the features for TVET: an integral part of general education; a means of preparing for occupational fields and for effective participation in the world of work; an aspect of lifelong learning and a preparation for responsible citizenship; an instrument for promoting environmentally-sound sustainable development; and a method of facilitating poverty alleviation.

In essence, TVET becomes an important tool that provides a range of skilled workers in the areas of building, energy generation, food production, health services and automobile maintenance, electrical and electronic services among others. Ogbazi and Osinem (2014) asserted that TVET encourages skill acquisition; knowledge and attitude needed for professional careers, and through its orientation, the social and economical inclusion of the rural population and the marginalized communities are addressed. The constant needs for skilled workers at different times from private industries to government own organizations should be effectively met employing TVET (Okafor, 2011). However, with the enormous promise and possibilities associated with TVET in propelling economic growth, the sector is still largely neglected and unproductive in Nigeria. Skill deficiency usually characterize the products of this educational programme with wide discrepancies between skills acquired in schools and those required in workplaces. In this regard, unemployment rate is constantly on the increase.

The exponential increase in unemployment level is to some extent dependent on non-availability of jobs but in some cases where jobs are readily available, individuals most especially graduates lack the requisite skills for such jobs. Ogbazi and Osinem (2014) emphasized that with the fast evolving changes in the world economy occasioned by the forces of globalization and ICT expansion, coupled with the fact that foreign investors place premium on skills and technical competencies of local workforce, neglecting the TVET sector will be tantamount to compromising the wellbeing of the populace and the national economy. Hence, in order to ameliorate this unwanted development which largely contributes to poor level of national and economic development in the country, a more specific and specialized technical education training could be employed.

Issues with Graduates' Productivity and Employability

There are series of issues that have emanated on graduates relevance to the job, level of productivity, skill-use, employability among others. According to Gopalakrishnan, Anitha and Stephen (2020), graduates of higher education institutions have failed to meet the expectations of the present job market so employability is a challenge for them. Moreover, Helyer and Lee (2014) ascertained that the higher education institutions have been accused of creating graduates who are hopeless in meeting the employment demands in the job market. The employers are of the opinion that the educational institutes are not preparing the graduates for the requirements of the employers or the economy. This simply establish that employed graduates are not productive on the job. Lack of employability skills is seen as a major cause of unemployment among graduates of universities and others. Even though the efforts to make the graduates suit the employment needs arise when they leave the institution, the employers still complain that the quality of fresh graduates remains the same. The graduates tend to overvalue themselves, even though the employers disputed that graduates are short of the required skills (Matsouka and Mihail, 2016; Gopalakrishnan, et al., 2020).

The revolution in information and technology has changed the labor market needs remarkably. In the twenty-first century, students need innovative skills and capabilities. Educational institutions make graduates prepared for employability, which helps to gain suitable knowledge, skills, and capabilities (El-Fekey and Mohamad, 2018). Graduates having evident skills and attitudes and also their capability to use them when searching for jobs and the job sustainment is referred to as Graduate employability. Employers in the industry agree that employability skills are important for the employees to perform exceptionally well in their jobs (Rasul, Rasul & Mansor, 2013). In the opinion of Bueno (2017), individuals' productivity is determined by the level of competencies, skills and values displayed on the job in an attempt to achieve the maximum organizational goal in accordance to assigned duties and responsibilities. Hence, it is unlikely for any unskilled graduate to be productive on the job.

Graduates who seeks to be relevant in the 21st century workplace as well as with the post COVID-19 economic situation must acquire realistic work skills and broad range of experiences and be ready to face the challenges of increasing competition, reactive to socioeconomic, cultural, technical and environmental challenges with flexibly and intelligently across various contexts. It has become so evident that higher institutions need to develop professionals who possesses practical skills as key players to engage with the dynamics of the workplace, with informed knowledge and responsive to organization's requirements (Bueno, 2017). Requisite employment skills and knowledge will help graduates to obtain jobs in the private and public sectors to reduce unemployment or create new jobs and employ others. In the post-covid-19 era, there are more challenges than usual. High unemployment rate in Nigeria has led to increasing poverty and serious social problems with major implications for the youths. There is dear need to improve the level of productivity, employability and employment generation among the youths becomes imminent. Specialized technical education training with relevant vocational skills seems to be the best means to improve economic opportunities for the teaming youths of Nigeria.

Specialized Technical Education Training

Technical education is a formal training that enables application of techniques of applied sciences and mathematical principles for the services of human kind. It has bias for nurturing skills and practical development of an individual in the chosen area of specialization. The technical Skill training enhances productivity and sustains competitiveness in the global economy. Asian Development Bank (2009) established that skills development is important for two reasons: it helps raise productivity (and consequently incomes), and it helps reduce poverty. In essence, a skill training like TVET contributes to economic growth and competitiveness by enhancing productivity of an individual, an enterprise, and national. The benefits to societies from higher individual and enterprise productivity manifest themselves in job creation, increased competitiveness and employment, or in a shift of employment from low to higher productivity sectors (Batra, 2000).

Presently, acquiring skills is not just enough since skills demands are changing. Skills demands have increased and many organizations are suffering from shortage of qualified workers. The usual skills are fading out in the present market with technology explosion (Minna-Eyovwunu, Tene-Omadide, Yahaya, & Orueyegha, 2020). Most of the previously relevant employees are becoming irrelevant on the job as the new skill set required to function appropriately in the present economic market is not acquired (Alaba, 2021). Invariably, the usual school training must be changed to meet up with the present skill demands. Graduates could avail themselves the opportunity of taken this advantage to obtain requisite skill demanded for possible employment which is currently missing in the economic market or personal employment creation. Presently, the tone of most businesses and corporate operations are dictated by technology, hence, the need for specialized technical training which is based more

on technological applications with little or no manual efforts rather than the purely manual skill demonstration.

Specialized technical education training simply refers to a more highly technical training with current and emerging technological applications which will establish relevant practice of graduates in any of the technical education areas of specialization. All the areas of specialization in technical education programme which include automobile and metal works technology, building and woodwork technology, electrical and electronic technology are technologically inclined and requires high level technological application for the 21st century relevance. Hence, they can be facilitated using effective technologies (United Nations Educational, Scientific and Cultural Organization, 2003). The traditional technical education programme have not delivered expected results as most of the graduates are among those looking for jobs rather than creating jobs for themselves and others (Naser & Motiee, 2012). Moreover, those who are opportuned to be employed could not demonstrate effective skill acquisition and professional practice for which they are certified by their respective institutions (Nwosu & Micah, 2017). The shift to a more specialized technical education training becomes very important to be able to prepare technical graduates for effective functionality in the post COVID-19 work environment.

At this point, countries of the world are renewing efforts to promote technical and vocational education and training as it is the only way to prepare young people for world of work, which reaches out to the marginalized and excluded groups to engage them in income-generating livelihoods (Rehman & Mughal, 2013; Alaba, 2021). In developing effective manpower for both gainful employment and self-employment, the use of appropriate tools and technology must be ensured. For instance, The creation of major software and machines have changed the face of operation in project preparation, presentations and execution in virtually all the areas of specializations in technical education. Specifically, Auto CAD is a major technological application required for excellent building drawing practice in building technology. It has different features which produces excellent drawing of any desired building style from the floor plan to all the elevations, roofing as well as the sectioning of the entire building. This produces more acceptable building plan structure required for approval of the proposed building project rather than the hand drawings which are employed during classroom lesson in the tertiary institutions. Also, Auto CAD electrical, Solid edge, among others are software developed for excellent designs and drawings of electrical wiring on building plans for effective implementation and costing of the real project. Meanwhile, car diagnostic tools, car fault detector, on-board diagnostics (OBD) are new technologies for automotive maintenance and faulty analytical practices which will aid objective repair services. The skill set required for present day employment and job creation goes beyond mere theoretical and manual knowledge but technology-based knowledge application of ones chosen field of operation.

The necessity of the new specialized technical education training is highly supported by the position of the Asian Development Bank (2009) which established four factors explaining the increased skill demands in both advanced and developing countries:

1. Physical capital and human capital skills are complementary. Increased investment in physical capital across countries is partly a function of absorptive capacity, which in turn depends on the availability of human capital and other institutional factors.
2. New technologies are knowledge and skill intensive. Technological change therefore shifts the relative demand toward skills in the labor force. Specifically, strong associations exist between the use of new information and communication technology (ICT) and the rise in skill and educational requirements.
3. Increased competition and the introduction of ICT have prompted many firms to undertake fundamental changes in their internal organization and work practices. New forms of work organization require greater responsibility and skills from the workforce, including problem-solving and communications skills as well as multitasking.

4. Trade openness causes a demand shift in skills through induced capital deepening or technological change.

Technological changes in the world has heralded a new wave of business operations and market demands. The previous skills acquired is now mostly considered non-relevant or a mismatch for the present activities and transactions. In essence, there would be a massive mismatch between the supply of workforce supplied based on the usual education and skills acquired and the new demand for today's skilled workforce based on present technological realities. However, Johanson (2004) suggested appropriate investment in education and skills developmental programmes to support the virtuous circle of technology and skill upgrading from the supply side of skill accumulation. Based on the foregoing, specialized technology-based technical education training could enhance:

1. Quality skill development in the chosen areas of practice.
2. Aid competitiveness in the labour market
3. Establish relevance in the specialized field of career
4. Increase chances of employability
5. Creation of employment opportunity
6. Increase graduates' level of productivity and contribution to economic and national development

The specialized technical education training can be facilitated with technology in many way as follows:

Technology as a delivery mechanism in Specialized technical education Training

When technology is used as a delivery mechanism the focus is on packaging course content for digital delivery. Kelsey, et al. (2021) recommended augmented reality technology as a delivery mechanism for effective practical applications of learned subjects and contents. For theoretical presentations with realistic learning experiences, there are common approaches in current use such as computer-assisted instruction (CAI), computer-based instruction (CBI), and web-based or online instruction (Ghavifekr & Rosdy, 2015). In essence, technology-based application could be extensively employed in the programme delivery as a major mechanism. This could facilitate quality skill development in the chosen areas of practice, acquisition of requisite skills for competitiveness in the labour market, establishment of relevance in the specialized field of career, increased chances of employability, possible creation of employment opportunity as well as increased level of productivity and contribution to economic and national development.

Technology as a complement to instruction in Specialized technical education Training

Technology can be used for drill and practice to complement instructions. When technology is used to complement instruction the emphasis is on providing opportunities to practice skills taught and extending learning by working with specific software applications (Kasworm and Londoner, 2000). Simulators are often used in TVET to address safety concerns during the initial phase of training and simplifying major but difficult concepts to avoid rote memorization which limits practicality of learned concepts. Moreover, Graphic Design Learning Media is more applicable for enhancing learning and designs in different specializations of technical education (Huda, Azhar, Almasri, Hartanto & Anshari, 2020).

Technology as an instructional tool in Specialized technical education Training

Literature has documented human learning as a very complex process. Hence, educators must work hard by employing realistic tools in aiding the process of teaching and learning with considerations given to learning conditions that are internal to the learners as well as condition of learning which is external to the learners (Huda, Azhar, Almasri, Hartanto & Anshari, 2020).

Analysis of the retention rate through the various senses indicates that ICTs can be used to create a variety of external conditions that are conducive to learning and retention. Following is a list of different types of audiovisual aids that can be used to maximize learning outcomes in TVET. Some of the technological facilities that could be employed include: Overhead projector World Wide Web Television Slide projector VCR Film strip projector Video Projector Simulators Digital Cameras Graphical interfaces Scanners Online publishing Telephone Printed materials Radio Chalk board Tape recorder Electronic board Computer One or two way video CD player Satellites Internet & Local area network (LAN) Interactive television (Kelsey, et al., 2021).

The introduction of specialized technical education training furnished with technological applications will potentially take care of the gaps in the training programme which has resulted in the acquisition of less important or required skill for employment both in the industries and other organizations. Also, the specialized technical education training could enhance improved level of productivity cum employment generation by well-grounded and skilled graduates with requisite problem solving abilities.

Conclusion

It was established that the traditional technical education training is not producing expected results with evidence in increasing rate of unemployment in the society. This defy the potentiality attached to the programme in enhancing skills for productivity and employability as well as creation of new employment opportunities. Rather, technical graduates are also among those who are struggling to get white collar jobs. The paper thus, concluded that graduates of different disciplines and professional areas could benefit from preferred specialized technical education training with employability skills and improved productivity but more importantly, relevant knowledge for solving societal problems and thereby provide legitimate incomes and career life in the absence of white collar jobs.

Recommendation

Based on the review of literatures in respect of establishing specialized technical education training for graduates' productivity, employability and employment generation, it is recommended that:

1. the specialized technical education mode of students' training be adopted with focus on the present skill requirement for employability among other importance.
2. Necessary adjustments should be made in enhancing expected graduates' productivity, employability and employment generation through technical education training
3. new set of skill demands should be given priority in the training as required by industries and economic market at large.
4. Relevant technologies should be employed in training and preparing the students for the world of work.
5. Relevant practical projects representing real work situation and environment with reference to students' specific areas of practice would aid appropriate skill acquisition.
6. The relevant skills acquisition and effective applications of acquired knowledge should form basis for students certification and graduation into the labour market rather than theoretical examinations.

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