

TECHNICAL VOCATIONAL EDUCATION AND TRAINING FOR EMPOWERMENT AND JOB CREATION THROUGH EMERGING TECHNOLOGIES AND INNOVATIONS IN THE ERA OF COVID-19 PANDEMIC

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Abstract

Technical Vocational Education and Training (TVET) is aimed at making individuals well-armed with skills and knowledge to enable them secure employment either by establishing small scale outfits or by being gainfully employed, thereby utilizing their skills, abilities and competencies. In a developing state like Nigeria, efforts to enhance empowerment and job creation in the era of COVID-19 pandemic through emerging technologies and innovation is inevitable. This paper, therefore, examines the role of TVET for empowerment and job creation in the COVID-19 era. The paper revealed the effect of the COVID-19 pandemic on the Nigerian economy. It further identified numerous emerging technologies and innovations needed for empowerment and job creation. Poor perception, low funding, obsolete curriculum, and acute shortage of manpower are identified as constraints to TVET programmes development in the country. The study recommended based on the foregoing among others that skills mismatch be reduced with appropriate policies and conditions, allocation of sufficient resources to TVET capacity-building programmes, the integration of ICT into TVET; the incorporation of the emerging technologies and innovations into TVET curriculum; creation and review as well as the TVET teachers and trainers to be regularly exposed to these emerging technological trends.

Introduction

Nigeria is faced with numerous challenges which include unemployment, poverty, squalor, environmental degradation, epileptic power supply, inadequate portable water supply, low productivity, all of which tend to hinder the development of the nation. Technical Vocational Education and Training (TVET) is seen as a tool for ameliorating these challenges and to put the nation on the path of economic growth and development.

Technical Vocational Education and Training (TVET) is undoubtedly a type of education which is meant to produce skilled and technical manpower that is necessary to restore, revitalize, energize, operate, and sustain the national economy and substantially minimize unemployment. TVET is crucial for acquisition of salable skills for livelihood and sustainability of its recipients, and economic development of a nation. This form of education provides the learners with requisite basic cognitive and handy skills necessary for entrance into the labour market as employees or as self-employed persons. UNESCO (2015) described TVET as all forms of education that involves the study of technologies, science, and acquisition of practical

skills, understanding, attitudes and knowledge that is related to occupation in various sectors of the economy. The Federal Republic of Nigeria (2014) outlined the goals of TVET to include provision of manpower in applied science, technology and commerce, provision of technical and vocational skills required for agricultural, commercial, industrial and economic development, provision of graduates who can apply scientific knowledge to solve environmental problems, introduction to professional studies in technologies and engineering, giving training on required skills for production of craftsmen and technicians, and enabling youths and able adults to have an adequate knowledge of technology.

TVET is aimed at making individuals well-armed with skills and knowledge to enable them secure productive employment either by establishing small-scale outfits or by being gainfully employed, thereby utilizing their skills, abilities and competencies. This type of education is of immeasurable importance in the socio-economic life of today's society, thereby demanding special and urgent attention. Most of the advanced or developed countries of the world like the United States of America, the United Kingdom, Japan, France and China practice a unique but home-tailored TVET programme which is capable of utilizing their resources to meet their peculiar socio-economic needs with the view of producing skilled personnel who contribute to national development meaningfully. The neglect of TVET in any nation of the world has deeper negative implications and far-reaching consequences on development. The economy of Nigeria, for instance, is bedeviled with the challenges of recession, unemployment, corruption, armed robbery, banditry, kidnapping, pipeline vandalization, terrorism and insurgency amongst others.

TVET is the core of both individual's and society's economy in the sense that it equips the recipients with relevant skills with which to explore the environment and harness the available resources which could productively serve the individual and the society at large. Aina (2017), in a bid to emphasize the importance of TVET, stated that the role of emerging technologies in TVET in the transformation of any economy and improvement in people's standard of living cannot be ignored. This is because emerging technologies in TVET are dominant factors for initiating and accelerating human progress and development. Aina further maintained that the relevance of the practical training of TVET would make Nigeria competitive in the world market. Unfortunately, the global outbreak of COVID-19 has threatened the ease of doing business including operation of technical and vocational enterprises globally, causing impediments to achieving technical vocational education and training goals for saleable skills for livelihood of enterprising citizens.

Job creation is the process of providing or making available paid jobs to the unemployed. In the view of Foundation for Job Creation (2016), job creation is the process of providing new jobs especially for people who are unemployed. Foundation for Job Creation further opined that job creation can occur when the unemployed person becomes an entrepreneur. Shimave, Nongugwa & Kesiki (2016), described job creation as the provision of opportunities for individuals to express their skills and understanding in specific areas of payment, either in cash or kind. Job creation is the act of making more jobs available especially for the unemployed. According to Asogwa, Isiwu & Ugo (2016), citing Wikipedia, job creation is a process by which

the number of jobs in an economy increases. Job creation covers a wide range of procedures used to develop and maintain a consistent internal pay structure that is acceptable to the workforce.

Dokubo & Dokubo (2013) maintained that all of the challenges listed above are the resultant effects of the near unwillingness of the Nigerian government to give TVET a proper place in the nation. Adebayo (2013) opined that youth unemployment and its attendant rising wave of crime are all parts of the major societal problems affecting the growth and development of the nation and other such developing nations for quite a long time now. According to Ntegwunga & Ime (2017), many scholars and political analysts have suggested that empowering youths with practical job skills is very imperative in order to minimize the negative socio-political and economic consequences of joblessness. Obviously, this is achievable only through TVET. It is pertinent to state that for TVET to achieve its envisaged multiple objectives, which include empowerment and job creation in this era of the COVID-19 pandemic, it must be repackaged adequately.

COVID-19 Pandemic and the Nigerian Economy

COVID-19 refers to an infectious disease caused by a virus known as a *corona virus*. This particular virus was not common in the world, not until December, 2019, when its initial appearance was observed in Wuhan, China. COVID-19 can be transferred from a carrier of the virus to another person who is unprotected and in close proximity to the infected person. This deadly disease was declared as a pandemic by the World Health Organization (WHO) in March 11, 2020, after it had claimed several lives globally. The symptoms of COVID-19 range from mild (or no symptoms) to severe illness with associated dry cough, sneezing, and difficulty in breathing which may appear 2-14 days after exposure to the virus. Other symptoms include fever, tiredness, pains, headaches, diarrhea, sore throat, loss of smell and taste, pain in the chest and difficulty in breathing which may result to death in extreme cases.

The severity of the disease hit quite hard on the economies of most developing countries in the world including Nigeria. The disease posed a serious health risk to every person, especially the elderly, as many died from it due to poor or already degraded immunity. The menace of the disease affected the Nigerian economy adversely as most states in the country declared partial or total lockdown in their territories, resulting in the closure of businesses, schools, markets, and worship centres. This development brought untold hardship and poverty to many citizens as many could not afford the basic necessities of life due to the sudden restricted earning ability. The pandemic equally affected employment, especially in the private sector, as many industries and businesses were shut down leading to loss of operational revenue and consequently loss of jobs, thus increasing the rate of unemployment (Owo & Ajie, 2020).

The world economy is generally distressed. Production and sale of services are truncated and the operations and daily activities of businesses, including technical and vocational firms are greatly threatened. The effect of COVID-19 pandemic is global and is of urgent concern with its high transmission rate and its overwhelming effects on increasing rate of unemployment as a result of low business activities globally. Richard & Kavitha (2020) affirmed that businesses all

over the world are struggling with the effects and associated risks of the disease, which has worsened unemployment rate in many countries. The current stumbling economic growth of businesses has failed to absorb the fast-growing workforce, leading to societal unrest, poor sales by businesses, dwindling profitability, collapse of businesses and increased unemployment rates across the world (World Health Organization, 2020). For instance, the outbreak of COVID-19 has caused a great deal of economic disruption as enterprises are closed down in an effort to curtail the spread of the deadly virus, causing many to lose their jobs across the world. Richard & Kavitha (2020) noted that enterprises are cutting production and downsizing staff, while most service-oriented businesses had suspended operations in line with the directive of the government. This has substantially brought down the rate of business activities, income and consequently revenues of Nigerian technical and vocational enterprises. In affirmation, the report of the Nigerian Centre for Disease Control (2019) revealed that the effect of COVID-19 pandemic is enormous on industrial and manufacturing activities such as technical and vocational enterprises across the world, making businesses to lose billions of dollars.

Furthermore, the COVID-19 pandemic created the largest disruption of the education system in history, affecting about 1.6 billion learners in more than 190 countries in all continents. Closure of schools and other learning spaces impacted 94% of the world's student population and up to 99% in low and lower-middle income countries. The education disruption has had, and will continue to have, substantial effects beyond education itself. Closure of educational institutions hampered the provision of essential services to children and communities including access to nutritious food, affecting the ability of many parents to work and increasing the risk of violence against women and girls. On the other hand, this crisis has stimulated innovation within the education sector (United Nations, 2020).

The COVID-19 pandemic has had significant economic and labour market impact worldwide, including Nigeria. The measures imposed to curtail the spread of the virus have effectively shut down major sectors of the economy and had an immediate and sweeping negative impact on employment. How deep and lasting these labour market effects are, remain to be seen, but they will undoubtedly shape the future direction of TVET and work-based learning in the country. The employment impacts of COVID-19 are far worse than anything the country has experienced in recent history, with millions projected to lose their jobs within the period. Measures put in place to contain the spread of the virus such as lock-downs, travel restrictions, social distancing policies, and workplace and schools' closure have impeded economic activity and had an immediate and sweeping negative impact on employment.

COVID-19 has disrupted economic activity, pushing many countries of the world into recession in the year 2020. According to the Asian Development Bank (ADB, 2021), the extended lockdown measures, particularly in Luzon in Philippine, which accounts for about 70% of the country's GDP, propelled the Philippines into a recession by the second quarter of 2020. This situation is not different in Nigeria which experienced a first and second recession in the year 2020 as well. This scenario signalled the severity of the COVID-19 shock to the economy and worse economic prospects.

TVET for Empowerment and Job Creation in COVID-19 Pandemic Era

The menace of COVID-19 pandemic to different sectors of the economy is enormous. The worst hit is the TVET institutions. In the study of practicals and prospectives in five countries on the impact of COVID-19 pandemic, the British Council (2021) posited that

- a. education policy makers at the national level should reflect on the degree to which TVET curriculum should be decentralized in order to respond to labour market changes;
- b. TVET institutions should develop a learner engagement strategy, where such is not already in place, that specifically takes account of access to learning for students in rural or hard-to-reach locations;
- c. institutions should develop an employer engagement strategy which should have a specific stand that focuses on those emerging industries where institutions and employers could work together to replace opportunities that were lost due to COVID-19;
- d. institutions should conduct an audit of their work-based curriculum to identify new opportunities for employer involvement in placement, projects and assessments;
- e. TVET institutions should create a digital journey plan for staff so that they can pick up the skills and new ideas they need at the appropriate pace for their practice;
- f. policy makers should consider the potential for national digital training programmes for staff in TVET institutions;
- g. policy makers should prioritize the impact of rural communities and women in their post-COVID-19 skills recovery programme; and
- h. institutions should incorporate procedure for remote support into their students' support and safeguarding policies.

Commenting further on the strategies for TVET for empowerment and job creation in COVID-19 era, British Council (2021) stated that

- a. new curriculum and commercial opportunities for TVET instruction should be produced;
- b. use of videos for practical learning;
- c. TVET institutions should conduct demonstrations live online;
- d. TVET institutions should facilitate the development of practical skills;
- e. TVET institutions should create project-based learning experiences and observation opportunities with employers;
- f. TVET should engage multiple placement providers to make-up missing on-the-job hours; and
- g. TVET institutions should bring industry contracts into the institutions for assessment to replace work placements.

Skill Initiative for Africa (SIFA, 2020) suggested that with reduced global trade foreseen, there will be an increasing need for local sourcing. This may lead to a short-term spike in the demand for technical and vocational skills. COVID-19, in the meantime, has exposed the urgent need for a paradigm shift on how TVET is delivered to continue training and development. In this regard, the skills development agenda needs to be taken in the broader context of other

measures that government is putting in place as a response to the crisis. Skills development policies and requisite financing must be integral to the recovery plans. Empowering young people with skills will continue to be the game changer.

TVET institutions and governments should adapt to the new demands of young people for digital learning. They expect faster and more practice-oriented learning than most of the existing institutions are able to offer and deliver. COVID-19 social distancing measures have exposed new job opportunities in the training and learning delivery chain. These include content developers that can marry the curriculum of TVET institutions to real life conditions through interactive modes (SIFA, 2020).

Emerging Technologies and Innovation for Empowerment and Job Creation

Technologies are transforming classrooms into more engaging, collaborative and productive learning environments in which instruction can be customized to learners' specific needs, interests and learning styles. It is also redefining the way educators teach, as well as the role they play-from being the sole source of information to being guides, facilitators and coaches in the learning process (Ibrahim, 2015).

Emerging technologies refers to the continuing development of existing technologies which can possess slightly different meanings when used in diverse areas like media, business, science and education (UNESCO, 2020). Emerging technologies, UNESCO affirms, commonly refers to technologies that are currently developing, or the ones that are expected to be available within the next five to ten years, and is usually reserved for technologies that are creating or are expected to create significant social or economic effects. Emerging technologies are those technical innovations that represent progressive innovations with a field for competitive advantage. They include a variety of technologies such as educational technology, information technology, nano-technology, biotechnology, cognitive science, robotics and artificial intelligence. Emerging technologies, in the view of Veletsianos (2015), refers to tools, concepts, innovations and advancements utilized in diverse educational settings (including distance, face-to-face, and hybrid forms of education) to serve varied education-related purposes (for instance, instructional, social and organizational).

Ibrahim (2015) listed emerging technologies to include *Web 2.0 technologies, synchronous instruction technologies, social networking technologies, and productivity technologies*. Ibrahim further listed the emerging technology tools as *blogs, wikis, social bookmarking tools, virtual worlds, podcasts, various educational games, Blackboard collaborate, Skype, Facebook, LinkedIn, Pinterest, Flickr, Twitter, Google+, Prezi, GoogleDocs, Mindmap, Voicethread, and Dropbox*. Within the context of emerging technologies, web-based technologies are also included. Web-based technologies are technologies which are accessible through the web and are made up of, but are not limited to, social media technologies like blogs, wikis, Facebook, Twitter and Learning Management Systems (Blackboard). These technologies are used widely in education for different purposes. Furthermore, emerging technologies are defined as media that are coming into view, coming into existence, or coming to commonality. It is an innovative technology that is reshaping the nature of education.

Innovation is a substantial change in the way TVET is practiced in an institution, making it more relevant to the needs of the economy, society and environmental context. Innovation also encompasses non-research and development (R&D) activities that are developed by TVET institutions from an existing stock of knowledge or knowledge external to the institution, not only through internal systematic R&D activities (UNESCO, 2020). Innovation brings about new ideas, new solutions and new opportunities which are used to address rapid transformational changes brought by different technological, economical, and even environmental factors.

According to UNESCO-UNEVOC (2019), innovation comprises substantial change in the way TVET is practiced by an institution, making it progressively more relevant to its economic, social and environmental context. The above definition implies that TVET institutions could be actors of innovation, bringing new and better products, services and processes for partners and students for better and more efficient delivery of TVET programmes and at the same time be users of innovation, where they utilize the innovative practices and products to operationalize TVET.

Innovation plays a crucial role in achieving the global Sustainable Development Goals (SDGs) in education – ensuring equal access to affordable and quality TVET for all and increasing the number of youths and adults with relevant skills for employment, decent work, and entrepreneurship. TVET, focused on training and educating individuals towards the development of their practical technical skills, socio-emotional skills and entrepreneurial skills, is a way to further empower the people, which is the main goal of the education agenda stated in the SDGs.

Innovation in TVET institutions helps increase citizens' potential to innovate and transform the economy and society through dynamic skills provision. It promotes relevance and makes TVET an attractive option that businesses would consider as an investment rather than as a cost. TVET institutions are encouraged to commit to an institution-wide approach to innovation, thereby maximizing their potential to overcome disruptive challenges and become drivers of innovation in their local skills and innovation ecosystems.

Innovation is described by OECD/Eurostat (2018) as a new or improved product or process (or a combination thereof) that differs significantly from the unit's previous products or processes, and that has been made available to potential users (product) or brought into use by the unit (process). Innovation can be found in nearly all dimensions of social life and workplaces, including government, business and non-profit organizations. Innovation is quite important for a number of reasons. For many institutions (mostly associated with policy making), innovation is the main driver of future social and economic development (OECD, 2015). Innovation is important because future economic growth highly depends on innovation-led productivity in the post-financial crisis context.

The use of emerging technologies, platforms and devices had become an integral part of education. This was evident during the recent COVID-19 pandemic lockdown, where many

educators and students had to rely on the use of various technological devices, platforms and tools like video-conferencing tools and e-learning platforms to aid continued education (Edeh, Sharma, Nwafor, Fyneyface, Sen & Edeh, 2020). Edeh *et al* enumerated the uses of emerging technologies for empowerment and job creation to include content development and delivery, knowledge creation, communication, assessment, research, academic advising and professional development.

Relevance of Innovation in TVET

According to the Organization for Economic Cooperation and Development (OECD) as cited by Haughey (2015), innovation is a driver of growth and well-being. New technologies, products, services, and organizations create jobs and rejuvenate industries, while making others obsolete. Innovations are capable of introducing new skill demands that impact employment, education, and training systems. Innovation and technological changes have negative impacts on employment because innovations allow firms to produce the same amount of goods with a lower amount of production factors such as labour.

The transmission of green economies, the implementation of digital technologies in the world of work and the emergence of new forms of entrepreneurship, among others, are not only changing the profile of jobs, but are also creating new possibilities for generating solutions for social and economic problems. The speed and scale of change calls for a broad process of transformation with TVET institutions increasingly acting as drivers of innovation in their local ecosystem and in parallel equally innovating the learning processes and products offered to youth and adults thereby increasing citizens' potential to innovate. As TVET adapts itself to the impacts and significant social, environmental and economic disruptions, innovative practices emerge with great potential to rejuvenate the future of TVET.

Systems of innovation can incorporate different types of actors and can be organized around different activities depending on the context. Similarly, the funding and delivery of TVET also involves different types of public and private stakeholders. TVET institutions act as producers of innovation with the aim of creating value and benefits for external actors (for instance, development of applied research or consultancy services). Innovation in TVET in developing countries like Nigeria refers to providing quality education with social inclusion, social engagement, and solving community problems (UNESCO-UNEVOC, 2019).

Commenting on the relevance of innovation in TVET, UNESCO-UNEVOC (2019) had stated that the development of innovation and technologies shapes skill demands and, therefore, the types of skills that TVET needs to cater for. Also, skill development contributes to the development of systems of innovation by providing skilled labour that is able to help shape and develop the system. Traditionally, literature on the role of TVET in the process of innovation development identifies skills development as one of the mechanisms of skill formation and diffusion which is oriented to equip different types of workers not only with general and specific skills, but also with innovation-related skills such as creativity, analytical thinking, problem-solving and leadership. TVET, in the context of the above, is considered as a key instrument for equipping the workforce with the skills required for the 'jobs of tomorrow' (Tether, Mina, Consoli & Gagliardi 2005).

It is generally recognized in innovation studies that skilled labour is a basic requirement for innovation development, production capacity and economic competitiveness. Innovation and technical changes are associated with an increasing demand for high-skill workers and a declining demand for low-skill workers in modern economies (Arundel, Lorenz, Lundvall & Valeyre, 2006). The large-scale implementation of automation on low-skilled labour tasks explains the declining demand for low-skill workers, while the increasing demand for high-skill workers can be described as a consequence of the proliferation and acceleration of new information technologies and new organizational structures. According to the OECD (2015), skills shape innovation in a number of ways. Some these ways are that

- a. skilled people generate knowledge that can be used to create and implement innovative practices;
- b. having more skills raises the capacity to absorb and adapt innovations. Educated workers also have a better foundation for further skills acquisition;
- c. skills interact in synergy with other inputs to the innovation processes including capital investment. For instance, studies reveal that human capital complements investment in the use of ICTs;
- d. skills enable entrepreneurship, which is often a carrier of innovation and structural change; and
- e. skilled users that are consumers of products and services often provide suppliers with valuable ideas for improvement.

In furtherance, Toner (2010) stated that a vocationally skilled labour force can also contribute to public and private research and development activities as they possess practical and problem-solving oriented skills. Across the European Union and Australia, about 45% of the business research and development workforce is made of TVET qualified workers, mostly technicians and trades persons (Toner, 2011).

Constraints Militating Against Technical Vocational Education and Training in Nigeria

Despite the enumerated importance of TVET to every country's economic growth, mainly within this era of the COVID-19 pandemic, there are numerous challenges this form of education is confronted with particularly in Nigeria. These pose as constraints to the success of the programme in the country. Among these constraints are:

- a. **Poor Funding:** This is the greatest constraint hampering TVET programme in Nigeria. This skill-based programme requires adequate funding which is hardly made available by both the government and the private sector. UNESCO recommends that developing nations should allocate at least 26% of its annual budget to education. Unfortunately, available records reveal that Nigeria spends a negligible proportion of its budget on education. Aina (2017) citing Abie & Eyam had opined that if education in general has fared poorly in funding, TVET has fared worse. Aina further revealed that the total budgetary allocations to TVET in the first, second and third National Development Plans were 0.10%, 0.36% and 0.84% respectively. Amoor (2010) had argued that it is for this reason that government pays little attention to improve the teaching and learning of TVET programme in Nigeria.

- b. *Lack of Candidate's Interest:*** In career choice making, interest plays a very vital role. Many people do not want to pursue a TVET programme because most of them do not want to end up as teachers. This calls for immediate societal reorientation on the career opportunities in TVET.
- c. *Inadequate Technical Vocational Educators:*** Teaching in this part of the world is perceived as a poor man's job. This discourages many people from taking up a career in the profession. Those who do are poorly paid and motivated (Nwachokor cited in Abie & Eyam, 2017). This scenario has led to mass exodus of qualified teachers to other sectors of the economy. The consequent is the shortage of teachers that it has created in the system. Igwe & Ariba (2010) reported that the shortage is based on the fact that only a handful of institutions train TVET teachers in Nigeria.
- d. *Obsolete Curriculum:*** Curriculum gives a sense of direction to teachers and takes cognizance of what society needs to inculcate in the learners. Aina (2009) posited that the curriculum in the schools is obsolete, not in line with modern practices and so not functional enough to produce graduates with employable skills. The curriculum lacks the emerging technologies and innovations which are in vogue, especially during this era of the COVID-19 pandemic.
- e. *Societal Perception of TVET:*** It is no longer news that the larger Nigerian society sees TVET as education for the poor or as education of lower repute. In line with this position, Salau cited in Abie & Eyam (2017) specifically pointed that the people are of the notion that TVET aims at preparing youths for low-status jobs and that it is a dumping ground for less academically able students (dropouts, the unintelligent and the under-achievers). Mamukuyomi (2006) posited that the coming of western education was not in the best interest of TVET. The reason being that the products of literary education had seemingly greater prospects for 'white-collar' jobs, while those of TVET were thought to end up with 'blue-collar' jobs. This rather erroneous idea made people to think of TVET as being an inferior type of education. Amoor (2010) had pointed out that based on the erroneous perception of TVET and the fact that most parents wanted their children to be in seemingly more prestigious careers, many youths were discouraged from taking up a career in the area of TVET. To reverse this trend, therefore, effort needs to be intensified to put an end to such misconceptions and to make more individuals to be properly informed on the relevance of the programme on the economic development of the nation.

The Way Forward

In the light of the foregoing constraints, what is the way forward? It is therefore, suggested that

- a. policy makers should consider the development of policies and institutional conditions, and achieve a reasonable minimization of skills mismatching, given that in any dynamic economy, such mismatches may not be eliminated entirely;
- b. enough capacity-building programmes that would entice TVET trainers and curriculum developers to create more innovative teaching and learning processes should be given enough time and resources;
- c. the use of ICT like distant learning technologies and the likes is expected to help increase accessibility and improve the quality of TVET teaching;

- d. finding alternative funding sources to support the development and implementation of innovations in the institutions is also advisable. In addition, 50% annual budgetary allocation to education should be devoted to TVET. Hence, proper budget allocation should be made for TVET institutions;
- e. to empower and create jobs for graduates of TVET in this era of the COVID-19 pandemic, concerted efforts should be made in the areas of curriculum creation and review to incorporate emerging technologies and innovative trends; and
- f. TVET teachers and lecturers should be exposed to in-service programmes and training in all forms of emerging technologies and innovations.

Conclusion

The role of emerging technologies and innovation in TVET for empowerment and job creation cannot be over-emphasized especially in this era of COVID-19 pandemic. The shock of the COVID-19 crisis on education has been unprecedented. It has set the hand of the clock back on the attainment of international education goals, and disproportionately affected the poorer and most vulnerable in society. Unless TVET institutions accept the new trends in technology and innovation, there will be increasing loss of jobs, necessitating increased hunger, poverty, and societal ills among others.

There are numerous challenges faced by TVET. Joblessness, training mismatch, economic stagnation and innovation deficiency are examples of a malaise that could be solved by a quality TVET programme. For job creation and empowerment in the era of COVID-19 pandemic, there is need to channel all thinking on how to produce innovative outcomes. Education stakeholders must be convinced that emerging technologies and innovations are the way forward. Emerging technologies and innovations are not the same as change in technology for change sake. They are very crucial in this era of COVID-19 pandemic when jobs are lost and people are unemployed, leading to increase in banditry, kidnapping, armed robbery and terrorism.

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