

EFFECTIVENESS OF ENTREPRENEURSHIP EDUCATION IN TERTIARY TECHNICAL VOCATIONAL EDUCATION AND TRAINING IN THE ERA OF COVID-19 PANDEMIC

R. O. Okwori, S. N. Yisa and M. J. Mustapha

^{1,2}*Department of Industrial and Technology Education, Federal University of Technology, Minna*

³*School of Technical Education, Niger State College of Education, Minna*

*Corresponding E-mail: okworirobert@gmail.com (Tel: +2348060966524)

Abstract: *The study determined the effectiveness of entrepreneurship education in TVET in the era of COVID-19 pandemic. Two research questions were formulated to guide the study. The study adopted a survey research design. The population of the study was made up of 20 subject consisting of all the 15 lecturers in the Department of Industrial and Technology Education and 5 lecturers in the Department of Education Technology, School of Science and Technology Education, Federal University of Technology, Minna, Niger State. The instrument used for data collection was a structured questionnaire. Mean and standard deviation (SD) were used to analyzed data collected. The study found out that these factors: teaching method, lack of career counselling, outdated curriculum, lack of motivation and so on moderately caused the ineffectiveness of entrepreneurship in TVET. These teaching methods: Zoom/google meet in lecture delivery; Video tape instruction; Blended Learning; Podcast, Vodcast e.t.c., can effectively enhance entrepreneurship in TVET in this era of COVID-19 pandemic. Based on the findings of this study, it was recommended among others that, the government should make electronic devices available in every technical college for teaching. There should be training and retraining of technical educators on distance learning in using the available electronic devices.*

Keywords: *Technical Vocational Education and Training, Effective Entrepreneurship, COVID-19 Pandemic*

Introduction

The Nigeria's philosophy of education is based on the belief that education is an instrument for national development and social change; education is vital for the promotion of a progressive and united Nigeria; education maximize the creative potentials and skills of the individual for self-fulfillment and general development of the society; education is the compulsory and a right of every Nigerian irrespective of gender, social status, religion, colour, ethnic background and peculiar individual challenges; and education is to be qualitative, comprehensive, functional and relevant to the needs of the society (Federal Republic of Nigeria, 2013). Consequently, the national policy on education has put in place the Post-Basic Education and Career development (PBECD). The PBECD comprises of senior secondary education, higher school and continuing education in Vocational Enterprise Institutions (VEIs). The technical and vocational education and training (TVET) in Nigeria is set up to give equal opportunities for students to learn and become self-reliant, Provide the technical knowledge and vocational skills necessary for agricultural, commercial and economic development among others. Okoye and Chijioke (2013) defined TVET as the form of education that advocates development of the head, training of the hand and enriching the heart. TVET is understood as comprising education, training and skills development relating to a wide range of occupational fields, production, services and livelihoods. TVET shall cover the following: Technical college; Vocational Enterprise Institution (VEIs) and National Vocational Qualifications Framework (National Board for Technical Education, 2011).). The main features of TVET at technical college level shall be structured in foundation and

trade modules and the curriculum for each trade shall consist of five components: General education, theory and related courses, workshop practice, industrial training/production work and entrepreneurial training. Trainees completing technical college programmes shall have three options: secure employment either at the end of whole course or after completing one or more modules of employable skills, set up their own businesses and become self-employed and be able to employ others and pursue further education i. Each programme or modules at technical colleges consists of entrepreneurial training which is an indication that the achievement of any of the goal of TVET at technical college level depends fully on the entrepreneurship knowledge of the students. Without entrepreneurship skills, one cannot be self-employed or be employable.

Entrepreneurship is the process of planning, creating, evaluating and exploitation of the available opportunities to produce goods and services for the purpose of making profit. Barzelogna (2021) defined entrepreneurship as "a process used to develop new businesses, products, services or processes inside of an existing organization to create value and generate new revenue growth through entrepreneurial thought and action." Entrepreneurship refers to an individual's ability to turn ideas into action (Maigida, *et al.*, 2013). Hence, it is clear that for an individual to become a successful entrepreneur, there are different skills to learn and master both the theoretical skill and practical skills which are referred to as entrepreneur competency. Entrepreneurial competences can be viewed as a mix of knowledge, skills and right attitudes, including self-confidence, networking, understanding risk, working with others, creativity, a sense of initiative, problem-solving, the ability to marshal resources, financial and technological knowledge (McCallum, 2019). From the above entrepreneurial competencies, it is revealed that for one to become a successful entrepreneur in his field or vocation there are a lot to learn from technical colleges. In other world, the entrepreneurial training in TVET have to be effective. Prior to the outbreak of pandemic there are several reports that the TVET graduates especially the aspect of entrepreneurial training are weak in terms of practical skill and are less employable by the industries (Fiala, 2014). Kissi, *et al.*, (2020) noted that the TVET graduates often have limited entrepreneurial skills and rarely undertake entrepreneur initiatives as they are persistently in search of non-existing jobs in the formal sector. The advent of COVID-19 pandemic has exposed every sectors, especially the entrepreneurship in TVET as not being effective as supposed. International Labour Organization (ILO) in Neal (2020) report noted that 188 million people in the world were seeking employment, and that 285 million people had either given up searching for work or did not have enough work. It is no longer a gain saying that the entrepreneurial training at technical colleges is ineffective.

The outbreak of COVID-19 has affected virtually every sectors of the human kind. According to Neal (2020) explained that the ongoing COVID-19 pandemic has substantially affected education and training sectors worldwide in two ways: Institutional level and Systemic level. At the institutional level, the Lockdown measures have led to the worldwide closure of TVET institutions and skills development organizations. As distance education and training becomes the norm, the ability of TVET institutions to implement such system depends on their capacity to adapt curricula as well as the preparedness of trainers and teachers. While at the systemic level the economic recession triggered by the COVID-19 crisis is causing a massive rise in unemployment and under-employment that could have a lasting impact on essential livelihoods. Transformations in the labour market will also result in changes in skills demands. TVET systems need to address the short- and medium-term impact of the current pandemic by not only scaling up TVET solutions but also formulating responses that reflect long-term sustainability and effective.

Effectiveness is the ability of producing an anticipated result or the ability to produce desired output. When the entrepreneurship in TVET is effective, it will help to be self-employed, create jobs for others to boost the economy and to safeguard the well-being of others. To be an effective and meaningful entrepreneur, the practical aspect of the entrepreneurial training has to be taught at technical college level with the experienced technical educators, relevant and updated resource. This was also resounded in the works of Omar, *et al.*, (2021) who carried out a study on embedding entrepreneurial knowledge in vocational college curriculum: A case study of the competency of TVET instructors, revealed that in order to achieve the goal of TVET, vocational college teachers must be the ones with the highest quality, competency, responsibility, and professionalism in performing their duties. With the effect of COVID-19, it has called for the shift from the traditional ways of imparting the entrepreneurship knowledge to the students in TVET. There is need to improve the level of entrepreneurial teaching and learning in technical colleges so that the goals of 21st century education can be successfully achieved. To overcome these challenges, the digital teaching and learning of entrepreneurship in TVET is inevitable. In chosen any type of electronic device, there is need to put into consideration the types of teaching and learning that will be carried out because the entrepreneurial training involves the practical skill which may not be easily blended into the electronic device.

Types of teaching methods that could be use in this era of COVID-19 pandemic for effectiveness of entrepreneurship in TVET is student centred method that embraces e-learning or digital technology learning because they have been used by different researchers in different fields, such as: video tape instruction, video conferencing, blended learning, Edublogs, web-bases instruction, microblogs instruction and many more (Balogun, *et al.*, 2019; Gambari, *et al.*, 2018; Josef & Nataliia, 2019; Omar, *et al.*, 2021). The researchers believe that the best teaching instrument needed for an entrepreneurship in TVET should be the one that is flexible which is capable to impart the necessary skill in them and prepare them to face any change that may occur in the nearest future. With the proper teaching and learning of entrepreneurial subjects students will be well equipped before they enter into the workforce. The alternative ways for every student in Nigeria to acquire practical and relevant skill is to give every student opportunity to choose their career of interest from the available education system. To provide lasting solution to the teaching and learning of entrepreneurship, the researchers find out the causes of ineffectiveness of the entrepreneurship in TVET and to enhance the teaching and learning of entrepreneurship in TVET in the era of COVID-19 pandemic that will not deter its aim and objectives.

Research questions

1. What are the factors responsible for ineffectiveness of entrepreneurship education in Tertiary TVET Institutions in Niger State?
2. What are the teaching methods that can enhance effectiveness of entrepreneurship education in tertiary TVET Institutions in Niger State in the era of COVID-19 pandemic?

Methodology

This study adopted a survey research design. This design enables the researchers to describe the attitudes, opinions, behaviours or characteristic of the population based on data collected from a sample of the Industrial and Technology Education Department and Education Technology Department in Federal University of Technology, Minna, Niger State on the effectiveness of entrepreneurship in TVET in the era of COVID-19 pandemic. The study was carried out in Federal University of Technology, Minna, Niger State, Nigeria. The population of the study was made up of all the 20 lecturers in the Department of Industrial and Technology Education and Education Technology Department, Federal University of Technology, Minna, Niger State. The instrument used for data

collection was a structured questionnaire. The questionnaire was designed to generate data for answering the research questions of the study. All the questionnaires administered were returned representing 100% return rate. The data collected for the study was organized and analyzed on the basis of the research questions. SPSS version 23 was used for the analysis. Decisions on the research questions were based on the resulting mean score interpreted relative to the concept of lower and upper limits of real numbers as shown in Table 1. The standard deviation was used to decide on the closeness or otherwise of the respondents to the mean in their responses. Any item with standard deviation of less than 1.96 indicated that the respondents were not too far from the mean or from one another in their responses and any item having standard deviation equal or above stated value signified that respondents were too far from the mean.

Table 1: Interpretation of Four Point Scale

S/N	Scale of Research Question 1	Scale of Research Question 2	Point
1	Strongly Agreed	Strongly Effective	3.50 – 4.00
2	Moderately Agreed	Effective	2.50 – 3.49
3	Agreed	Moderately Effective	1.50 – 2.49
4	Disagreed	Not Effective	0.50 – 1.49

Results

Table 2: The Mean Response of the Respondents on Factors Responsible for Ineffectiveness of Entrepreneurship Education in Tertiary TVET Institutions in Niger State

S/N	Item	Mean	SD	Decision
1	Lack of effective communication	2.33	1.13	A
2	Inadequate and outdated infrastructure	2.60	0.64	MA
3	Lack of motivation	2.60	0.74	MA
4	Government passive attitude on TVET	3.47	0.92	MA
5	Outdated curriculum	2.73	1.03	MA
6	Lack of technology devices to teach the students	2.80	0.42	MA
7	Lack of qualified technical educators to teach the subject	2.67	1.29	MA
8	Lack of career counselling	1.73	0.46	A
9	Teaching method adopted	3.10	0.92	MA
	Grand Mean	2.67		MA

Keys: MA= Moderately Agreed; A= Agreed; SD= Standard Deviation

Table 2. shows that respondents agreed with items 1 and 8 as factors responsible for ineffective of the entrepreneurship in TVET with the means of 1.73 and 2.33. Items 2, 3, 4, 5, 6, 7 and 9 with the mean values range from 2.60 to 3.47 signify that the respondents moderately agreed the factors responsible for ineffective of entrepreneurship in TVET. The total grand mean is 2.67 which means these factors are responsible for ineffectiveness of entrepreneurship in TVET at moderate level. Since the standard deviation of the respondent on the factors responsible for ineffectiveness of entrepreneurship in TVET are less than 1.96, it is an indication that the respondents were not too far from the mean or from one another in their responses.

Table 3: The Mean Response on the Teaching Methods that can Enhance Effectiveness of Entrepreneurship Education in TVET in the Era of COVID-19 Pandemic

S/N	Item	Mean	SD	Decision
1	Blended Learning	3.32	0.80	E
2	Video tape instruction	2.71	1.13	E
3	Video conferencing	2.53	0.95	E
4	Mobile electronics response system	2.90	0.79	E
5	Zoom/google meet in lecture delivery	3.45	0.75	E
6	Computer aided concept cartoon	2.76	1.03	E
7	Peer learning	2.41	0.83	ME
8	Television/Radio teaching	2.50	1.00	E
9	Self-directed/self-instruction	2.25	0.95	ME
10	Podcast and Vodcast	3.35	0.81	E
11	Web-based instruction	3.33	0.73	E
12	EduBlogs	2.17	1.04	ME
13	Microblogs instruction (Facebook, WhatsApp, Twitter etc)	2.10	0.91	ME
Grand Mean		2.75		E

Keys: ME= Moderately Effective; E= Effective; SD= Standard Deviation

Table 3 shows that the respondents have agreed with items 1, 2, 3, 4, 5, 6, 8, 10 and 11 as effective in enhancing teaching and learning of entrepreneurship in TVET with the mean range from 2.50 to 3.45. Items 7, 9, 12 and 13 with the mean values range from 2.10 to 2.41 signify that the respondents agreed that those teaching methods are moderately effective when used to teach entrepreneurship in TVET. The total grand mean is 2.75 which means these strategies could be used to enhance teaching and learning of entrepreneurship in TVET in this era of COVI-19 pandemic. It is revealed that the respondents were not too far from the mean or from one another in their responses since the standard deviation of the respondent on the teaching methods that can enhance effectiveness of entrepreneurship education in TVET in the era of COVID-19 pandemic are less than 1.96.

Findings

1. The factors listed moderately caused the ineffectiveness of entrepreneurship education in TVET.
2. The teaching methods listed can effectively enhance entrepreneurship education in TVET in this era of COVID-19 pandemic.

Discussion of findings

Ineffectiveness of entrepreneurship in TVET mean that the programme is not achieving the expected result. The aim and objective of TVET is cleared on the national policy on education. The TVET is set up to reduce the unemployment in the society and enable every child or students that graduate from any level of TVET should be self-employed or be employed by other. The above stated objective is only feasible when the entrepreneurship education in TVET is effective. Ineffectiveness of entrepreneurship in TVET was attributed to: lack of effective communication, lack of infrastructure, lack of motivation, lack of career counseling, lack of qualified technical educator and many more as revealed in table 2. The better the teacher in terms of knowledge, skills and method of teaching adopted the better the outcome (learning and performance). To be a qualified technical educators it is not by obtaining NCE (Tech), B.Tech with education or B.ed with TRCN certificate, but it is about knowing the practical, understand what is obtainable in the society. For effectiveness of entrepreneurship in TVET, there is need for qualified and skilled technical educators for effective teaching and learning.

In agreement with this study, Ismail and Abiddin (2014) revealed that in TVET due to the shortage of qualified teaching staff, many teaching staff are hired directly after study in university or college based on their academic qualifications without considering their skills. Omar, *et al.*, (2021) also supported the study by saying that in order to achieve the goal of TVET, vocational college teachers must be the ones with the highest quality, competency, responsibility, and professionalism in performing their duties. Further stressed that the vocational colleges might suffer from a lack of qualified instructors. Lack of career counseling has also contributed to the low effectiveness of entrepreneurship in TVET in Nigeria. When students are not properly guided to choose the right career they end up choosing the wrong ones which may not be good for them. For instance, a child that is good in electrical work may end up in wood work. Such students will not be motivated to put in his effort and work hard. Such student may end up not using that certificate or knowledge acquired at technical college for any good course. He will then go out of school there by saying school/education is a scam discouraging others. Some parent's belief that TVET institution is for low IQ student, or for those that could not perform in the regular education system are the ones attending the TVET education. Therefore, students in the technical colleges are looked down at wherever they find themselves simply because, their mind have been poisoned. Ineffective career counselling for TVET students can affect their choice of career which in turn contribute to their behaviours that is lack of motivation in acquiring the entrepreneurship knowledge needed for the world-of-work. In support of this study, Yeap, *et al.*, (2021) revealed that career counselling is important for students and parents to explore and guide students in choosing their professional career based on their strengths, weaknesses, resources and opportunities. With this, students will be motivated and be proud of their chosen career.

To enhance the effectiveness of entrepreneurship in TVET is to improve its value, quality or attractiveness. It was revealed by different researchers all over the world that entrepreneurship in TVET lacks effectiveness which has been calling for enhancement. But with the outbreak and the effect of COVIC-19 pandemic, there is urgent needs for enhancement from different dimensions. One of the best way to enhance the teaching and learning of entrepreneurship in TVET is through the distance learning or digital teaching and learning method adopted in this era of COVID-19 pandemic. Such as: blended learning (augmented reality, virtual reality), Video tape instruction, Video conferencing, Zoom/Google meet in lecture delivery, Computer aided concept cartoon, Podcast and Vodcast, Web-based instruction and many more as revealed in table 3. The result shows that these teaching methods are effective which is an indication that they can be used to enhance the effectiveness of entrepreneurship in TVET in this era of COVID-19 pandemic. This finding was further strengthened by the study of Josef and Nataliia (2019) on the application of digital tools for the development of entrepreneurship competencies who revealed that when entrepreneurial digital learning environment (EDLE) is integrated with face-to-face learning, it will form a modern blended learning strategy. This face-to-face learning could be a peer learning. With peer learning the number of student gathering will be reduced. The study of Neal (2020) on world youth skill day noted that TVET institutions face extra challenges beyond those affecting other education sectors, as it is difficult and sometimes impossible to develop practical skills online. Neal (2020) stressed that TVET programmes often require a blended approach with some time spent developing practical skills in workshops or industry settings. In line with this study, the study of Balogun, *et al.*, (2019) examined three modes of podcast augmented instruction and pre-service Physics teachers' achievement and retention, the result revealed that students taught Physics using Video Podcast Augmented Instruction and Audio Podcast Augmented Instruction achieved better than their counterpart taught using Enhanced Podcast Augmented Instruction or Classroom Lecture Only. This study corroborates with the study of Gambari, *et al.*, (2018) on the impact of virtual laboratory on the achievement of secondary school chemistry students in homogeneous and heterogeneous collaborative environments, the results showed that students in

homogeneous ability group taught Chemistry using virtual laboratory instruction in collaborative setting performed better than their counterpart taught Chemistry in heterogeneous grouping composition. The major challenges with all the process are: the availability of the devices in our technical colleges, readiness of the technical educators to embrace digital teaching and learning, availability of power supply and ability of the students to afford data and internet.

Conclusion

Ineffectiveness of entrepreneurship in TVET is based on lack of qualified technical educators, lack of motivation, outdated curriculum and many more. It was revealed that the entrepreneurship in TVET can be effective in this era of COVID-19 pandemic by adopting e-learning methods of teaching and learning such as: Podcast and Vodcast, Video tape instruction, blended learning, Zoom/google meet lecture delivery, Web-based instruction and many more. Therefore, the study has determined the best way of enhancing teaching and learning of entrepreneurship in TVET especially during the era of COVID-19 pandemic which will include practical skill and maintain the physical distancing. Not only that, the methods should be capable of preparing students in TVET to face the future as strong as possible in case of any future pandemics.

Recommendations

1. The TVET curriculum developers should restructure courses to fit into the electronics technology that can be used to teach both theory and practical skills of entrepreneurial trainings.
2. The Government should make electronics devices available in every technical college.
3. There should be training and retraining of technical educator on distance learning in using the available electronics devices.

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