



## Entrepreneurship Education: A catalyst for Technical and Vocational Education Training (TVET) sustainability in Nigeria

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### Abstract

*It is impossible to overstate the importance of entrepreneurship education in maintaining technical and vocational training in Nigeria. It is a dynamic force that is necessary to support the growth of the economy in any country, but particularly in Nigeria. The study looked at how technical and vocational education training (TVET) in Nigeria is sustained through entrepreneurship education. In order to achieve the intended objective, a descriptive study was designed, and the data collection strategy was carried out by distributing a questionnaire to the 544 participants who met the study's eligibility requirements. To examine the respondents' answers, descriptive and inferential statistics from the Friedman Chi-Square test were used. Out of the 534 copies of the questionnaire, only 534 were returned for analysis. The outcome demonstrated that entrepreneurship education is crucial to Nigeria's continued provision of technical and vocational education. The p-value of the Friedman Chi-square test performed for the test items of 0.0000 was less than the crucial value of 5%, which served as the foundation for this. The authors came to the conclusion that technical and vocational educational training (TVET) in Nigeria was, in fact, significantly sustained by entrepreneurial education, and they argued that this should be included in the core curriculum of TVET institutions in Nigeria.*

**Keywords:** *Technical Training, Vocational Education, Entrepreneurship, Economy, Education*

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### Introduction

The technical and vocational education and training (TVET) system will always be seen as the foundation of industry and technology in any country where it is implemented with remarkable success and accomplishment. TVET's primary purpose is to train vocational educators; however, it can also address entrepreneurship education, which will have a significant impact on the development of serious entrepreneurs prepared to support the long-term viability of a technologically oriented economy (European Commission, 2013; Kissi, Adjei-Kumi, Debrah, Ahadzie, & Neal, 2020; Halliru, Yusri, Umar, & Abdullahi, 2021; Yeap, Suhaimi & Nasir,

2021; Ochedikwu, Ukuma & Attah, 2013). Because of this, TVET has not received enough consideration in the field of entrepreneurship education, where individuals with technical and vocational training have the potential to work for themselves as self-employed entrepreneurs in the development of entrepreneurship (Basheer, 2016; Cooney, 2016; Omar, Ismail, Abdullah, Kadir, & Jusoh, 2021). Taking entrepreneurship seriously in technical and vocational education is one proven strategy to save the economy. Converted into final goods and services for the marketplace are meaning, skills, inventions, discoveries, and good innovations. This educational system yields enormous benefits, such as

reduced capital flight, employment of labor, poverty eradication, and self-employment (Famous, 2015). The majority of graduates, particularly in areas where TVET system institutions are in use, go on to become jobless and idle as a result of inadequate entrepreneurial education, which prevents them from working for themselves, and inadequate instillation of self-reliance (Ogunkokoya, 2017; Olanipekun, Brimah & Rabi, 2015). The developing country has lost out on the economic contribution that its graduates would have made since the subject of entrepreneurship education has been excluded from the curriculum (Neal 2020). Osalor (2013) asserts that the absence of such quality leads to the waste of both human and natural resources. This is a result of the general youth and graduates who leave higher education not being appropriately engaged with sufficient skills to allow them to make use of Nigeria's natural resources. (Azim & Kahtani, 2014; Walker & Joyner, 1999; Barzelogna, 2021; Frey Osborne, 2013). Studying the effects of entrepreneurial education is therefore necessary since it can promote skills and competencies and function as a catalyst for the sustainability of technical and vocational education and training in Nigeria.

Subdivisions such as pre-vocational, vocational, technical, colleges of education (technical), polytechnics, and universities comprise the Nigerian definition of technical and vocational education and training (TVET). The Joint Admission and Matriculation Board (JAMB) recognized the National Technical Certificate (NTC) and National Business Certificate (NBC) as requirements for admission into institutions of advanced literacy in order to maintain and expand the reformation in the education sector. For their exams, all specialized colleges were required to register as chapters of the National Business and Technical Examinations Board (NABTEB) (Nwekeaku, 2013).

## Methodology

In order to collect data for the study, a descriptive research design was used. Questionnaires were distributed to respondents who were specifically chosen from six colleges of education, polytechnics, colleges of technology, and vocational studies that held valid licenses from Nigeria's National Board for

Technical Education (NBTE) (NBTE, 2023). There was one TVET in each of the following South-West zones: Lagos, Ekiti, Ogun, Ondo, Osun, and Oyo. There are currently 212 TVET institutions in South-West Nigeria, according to National Board for Technical Education records (NBTE, 2023).

## Sampling Technique

### Population and Sample Size

Based on information from course lecturers in each of the chosen schools, the total number of students offering entrepreneurship, business studies, and commerce was found to be 6,500. Furthermore, it was discovered that 166 instructors were teaching commerce and business studies, entrepreneurship, and entrepreneurship technology in the chosen TVET. This results in a total of 6500 people in the study population. Furthermore, every student interested in participating in the survey in the fields of entrepreneurship, business studies, entrepreneurship technology, and commerce has an equal chance of being chosen by the researcher because all lecturers must be included in the study to improve representativeness. Specifically, the Yamane Taro formula (1964) was utilized to determine the sample size of students that were included in the study's sample. This was done using a simple method of random sampling to select the appropriate sample size. It defines the formula as:

$$n = \frac{N}{(1 + N(e^2))} \quad 3.1$$

where n is the sample size

N= population size, and e = level of significance.

The level of significance used for this research is 5%. Using the formulae, the required size of students to be included in the sample was:

$$n = \frac{6500}{(1+6500(0.05)^2)} = \frac{6500}{17.25} \quad 3.2$$

Therefore, solving the equation would give n = 376.81.

377 was the equivalent of this. Accordingly, the study's sample size of students was 377. Adding this to the total number of lecturers in the chosen TVET that had to be included in the study resulted in 543 (i.e., 377 + 166 = 543).

## Data Collection

The study only utilized 534 of the 543 questionnaires that were given to respondents; the remaining copies

were not used. The completeness score was 98.34%. The final-year students, lecturers, and teachers who teach entrepreneurship, business studies, and commerce at tertiary institutions, specialized schools, and technical schools in Southwest Nigeria are the respondents to the closed-ended questionnaire. They can choose their responses on a five-point Likert scale, with 5 representing strongly agree, 4 representing agree, 3 representing undecided, 2 representing disagree, and 1 representing strongly disagree. The questionnaire was divided into two

sections: part one asked questions about the respondent's biographical information, such as age, marital status, and level of education, while part two included the study questions, objectives and research hypotheses.

**Data Analysis**

To find out more about the study's objective, the gathered data were analyzed using the Friedman Chi-squared and Hotelling tests. A significance level of 5% was used for the test.

**Result and Discussion**

**Table 1 Frequency Distribution of Respondent Demographic Variable**

Respondent Characteristics	Demographic	Frequency	% Percentage
<b>Age in Years</b>			
Less than 30		120	22.47
30-34		24	4.49
35-39		230	43.07
40-44		84	15.73
45 and Above		76	14.23
<b>Status</b>			
Students		374	70.04
Lecturers/Researchers		160	29.96
If lecturers / Researchers indicate your highest level of Education			
B.Sc./B-ED/B.A/B.TECH		64	40.00
MSC/M.TECH/M.A/MED		78	48.75
PHD		6	3.75
HND		12	7.50

Source: "Field Work (2023)"

Upon examining the table, it can be observed that 22.47% of the participants were under 30 years old. Conversely, 4.49%, 43.07%, 15.73%, and 14.23% of the participants were in the 30-34, 35-39, 40-44, and 45+ age groups, respectively. This suggested that a sizable portion of the respondents were in the 35–39 age range. As such, the opinions formed by this group of respondents could have a substantial impact on the study's conclusion. Furthermore, the status-based distribution of respondents showed that 70.04% of them were students. Conversely, lecturers and researchers made up 29.96% of these respondents. Furthermore, based on the educational

backgrounds of the researchers and lecturers, the frequency distribution of respondents revealed that 40.00% of the respondents held a B.Sc., B.ED., or B.A./B.TECH degree, whereas 48.75% of the researchers held an M.Sc., M. Tech., or M.A/MED degree. Furthermore, 7.50% and 3.75% of the respondents, respectively, held HNDs and Ph.Ds. This suggested that a respectable proportion of the participants held an M.Sc., M. Tech., or M.A/MED. The variable may have had a substantial impact on how test items on entrepreneurship education as a catalyst for technical and vocational education were rated by respondents, especially the researchers.

**Table 2: Mean and Standard Deviation Computed for the variable of Entrepreneurship Education as a Catalyst for Technical and Vocational Education**

S/N	Variable	N	Mean	STD	Rank	Remark
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1	Every graduate will have unhindered access to the abilities and information required to launch their own business thanks to entrepreneurship education.	534	4.10	0.95	9 <sup>th</sup>	A good catalyst for TVET
2	The goal of the entrepreneurship education curriculum is to give graduates the skills they need to launch their own small business.	534	4.04	0.79	6 <sup>th</sup>	A good catalyst for TVET
3	The institution must make sure that its entrepreneurship programmes have real-world applications that will help students launch their new businesses.	534	4.23	0.74	4 <sup>th</sup>	A good catalyst for TVET
4	It is thought that by encouraging the formation of new enterprises, entrepreneurship education can serve as a platform for addressing unemployment in local communities.	534	3.65	1.06	12 <sup>th</sup>	A good catalyst for TVET
5	Students who receive entrepreneurship education are better able to see self-employment as a viable graduate career option.	534	3.85	1.01	11 <sup>th</sup>	A good catalyst for TVET
6	Through internships at local businesses, the institution teaches graduates business skills as part of its entrepreneurship education programme.	534	4.01	0.95	9 <sup>th</sup>	A good catalyst for TVET
7	Graduates' ability to think critically and creatively is greatly influenced by the skills they acquire in entrepreneurship education.	534	4.44	0.68	1 <sup>st</sup>	Effective Catalyst for TVET
8	The organisation helps students launch their own enterprises by helping them create business plans, providing financial support, and expert guidance from business mentors.	534	4.21	0.73	3 <sup>rd</sup>	Effective Catalyst for TVET
9	The organisation works with specialists in entrepreneurship to advance entrepreneurship education.	534	4.27	0.76	5 <sup>th</sup>	Effective Catalyst for TVET
10	The organisation invites business owners and professionals from various organisations to speak with students about their experiences.	534	4.07	0.95	9 <sup>th</sup>	A good catalyst for TVET
11	Graduating students are given the freedom to try things and fail so they can experience smart failures as a necessary component of learning.	534	4.15	0.86	7 <sup>th</sup>	A good catalyst for TVET
12	The school arranges for students to visit businesses in order to broaden their understanding of the subject.	534	4.29	0.71	2 <sup>nd</sup>	Effective Catalyst for TVET

**Source: ‘Field Work (2023)’**

\*\* SA's five-point Likert scale: strongly agreed = 5, agreed = A = 4. \*\* Acceptable mean = 3.00 \*\* Test items were good catalysts for TVET if the calculated mean was greater than or equal to 3.00 or otherwise. \*\* Rank was based on the STD. \*\* STD = Standard Deviation; moderately agreed = MA = 3, disagreed = D = 2, and strongly disagreed = SD = 1.

The findings for the respondents' perception of the variable on entrepreneurship education as a catalyst for technical and vocational education training are

displayed in Table 2, along with the mean and standard deviation. Based on the data presented in the table, a significant proportion of the participants expressed agreement that entrepreneurship education serves as a driving force behind technical and vocational education training. The basis for this inference was the fact that all test item mean values computed were significantly higher than the acceptable mean of 3.00, and the standard deviations showed negligible deviations from the mean. For example, it could be argued that good

entrepreneurship education provides students with the information and abilities required to launch their own business.

This claim was supported by the fact that the test item's calculated mean value of 4.10 was significantly higher than the acceptable mean of 3.00 with a 0.95 standard deviation, indicating negligible mean variation. This implied that by enhancing technical and vocational education and training, learners could acquire the knowledge and skills necessary to create their own jobs through entrepreneurship education. The ensuing study demonstrated that students could enhance their technical and vocational education training through entrepreneurship education. Additionally, it was discovered that the test item's mean value of 4.04, which indicated that the institution's entrepreneurship education curriculum was created to give students the

tools they needed to launch their own businesses, exceeded the acceptable mean of 3.00. This suggested that a sizable portion of the participants agreed with the test item. Therefore, students' technical and vocational education training may be improved with an entrepreneurship education curriculum designed to instill the necessary practical training and exposure. This demonstrated that students' expectations regarding technical and vocational education training (TVET) must have melted when an emphasis on entrepreneurship was incorporated into curriculum design to improve students' skills. Above all, Table 2's results showed that entrepreneurship education was necessary for technical and vocational education training (TVET) in order to make it relevant and meaningful to students and to fulfill their desire to be able to use the knowledge and skills they have acquired to earn a living.

**Table 3 Testing the Significant of the Individual Entrepreneurship Education Variables**

		ANOVA				
		Sum of Squares	Df	Mean Square	F	Sig.
Every graduate will have unhindered access to the abilities and information required to launch their own business thanks to entrepreneurship education.	Between Groups	199.454	30	6.648	11.029	.000
	Within Groups	302.625	502	.603		
	Total	502.079	532			
The goal of the entrepreneurship education curriculum is to give graduates the skills they need to launch their own small business.	Between Groups	152.594	30	5.086	12.013	.000
	Within Groups	212.135	503	.423		
	Total	364.729	533			
The institution must make sure that its entrepreneurship programmes have real-world applications that will help students launch their new businesses.	Between Groups	112.054	30	3.735	10.103	.000
	Within Groups	185.961	503	.370		
	Total	298.015	533			
It is thought that by encouraging the formation of new enterprises, entrepreneurship education can serve as a platform for addressing unemployment in local communities.	Between Groups	320.909	30	10.697	20.637	.000
	Within Groups	260.724	503	.518		
	Total	581.633	533			
Students who receive entrepreneurship education are better able to see self-employment as a viable graduate career option.	Between Groups	255.521	30	8.517	15.113	.000
	Within Groups	283.483	503	.564		
	Total	539.004	533			
Through internships at local	Between Groups	205.098	30	6.837	14.912	.000





businesses, the institution teaches graduates business skills as part of its entrepreneurship education programme.	Within Groups	228.312	503	.458		
	Total	433.410	533			
Graduates' ability to think critically and creatively is greatly influenced by the skills they acquire in entrepreneurship education.	Between Groups	137.185	30	4.573	14.012	.000
	Within Groups	164.156	503	.326		
	Total	301.341	533			
The organisation helps students launch their own enterprises by helping them create business plans, providing financial support, and expert guidance from business mentors.	Between Groups	261.235	30	8.708	13.456	.000
	Within Groups	325.507	503	.647		
	Total	586.742	533			
The organisation works with specialists in entrepreneurship to advance entrepreneurship education.	Between Groups	123.226	30	4.108	11.224	.000
	Within Groups	184.086	503	.366		
	Total	307.313	533			
The organisation invites business owners and professionals from various organisations to speak with students about their experiences.	Between Groups	157.187	30	5.240	16.255	.000
	Within Groups	162.132	503	.322		
	Total	319.318	533			
Graduating students are given the freedom to try things and fail so they can experience smart failures as a necessary component of learning	Between Groups	250.396	30	8.347	21.467	.000
	Within Groups	195.574	503	.389		
	Total	445.970	533			
The school arranges for students to visit businesses in order to broaden their understanding of the subject.	Between Groups	211.390	30	7.046	15.965	.000
	Within Groups	222.003	503	.441		
	Total	433.393	533			

**Source: ‘Field Work (2023)’**

In order to ascertain whether each variable of entrepreneurship education catalyzed technical and vocational educational training, Table 3 displays the findings of the analysis of the variance test, also known as the F-test. The p-values of the F-statistics computed for the test items of 0.0000s were found to be less than the critical value of 5% after looking at the results in the table. This suggested that training in technical and vocational education was accelerated by entrepreneurship education.

This further demonstrated how the pertinent entrepreneurship education and training that the students had received had a significant impact on their ability to develop the abilities, knowledge, initiative, creativity, and opportunities that they needed to enhance their technical and vocational educational training. This was brought up by

Ogunkokoya (2017), who contended that obtaining technical and vocational training could be challenging in the absence of pertinent entrepreneurship education. This was caused by the fact that entrepreneurship education gave students' technical knowledge and vocational training a purpose and relevance that were appropriate for the opportunities presented by societal needs. Therefore, students' technical and vocational educational training has improved as a result of the entrepreneurship educational curriculum, which exposes them to the practical aspects of entrepreneurship education. The ability of students to reintegrate their technical and vocational education into practical usefulness through the creation of worthwhile ventures and service businesses that might satisfy societal needs was thereby enhanced by entrepreneurship education.

**Table 4: Joint Test Statistics of Entrepreneurship Education as a Catalyst for Technical and Vocational Educational Training**

**H<sub>0</sub>: Entrepreneurship Education is not a catalyst for technical and vocational Education and Training**

ANOVA with Friedman's Test						
		Sum of Squares	Df	Mean Square	Friedman's Chi-Square	Sig
Between Entrepreneurship Education		1797.518	525	3.424		
Within Entrepreneur Edu	Between Items	128.873 <sup>a</sup>	11	11.716	222.662	.000
	Residual	3219.961	5775	.558		
	Total	3348.833	5786	.579		
Total		5146.352	6311	.815		

**Source: "Field Work (2023)"** \*\*\* Grand Mean = 4.0162

Kendall's coefficient of concordance W = .025.

**Table 5: Hotelling 's T-squared Test**

Hotelling's T-Squared	F	df1	df2	Sig
178.821	15.947	11	515	.000

**Source: "Field Work (2023)"**

The Friedman Test results, which assess the overall test items of entrepreneurship education as a catalyst for technical and vocational educational training, are shown in Table 4. After carefully examining the outcome in the table, it was found that the Friedman Chi-square statistic's p-value of 0.0000 was less than the crucial value of 5% and had a statistically significant value of 222.662. The joint null hypothesis, according to which entrepreneurship education did not serve as a stimulant for technical and vocational education and training, was thus shown to be false. It was reasonable to assume that TVET was sparked by entrepreneurship education. This implied that, given its explosive growth in the field of technical education, entrepreneurship education was required to deliver efficient technical and vocational educational training. This was significant because it showed that if entrepreneurship education were integrated into TVET, learners' ability to generate ideas with the appropriate creativity, innovation, knowledge, and skills could be improved. This was a result of entrepreneurship education's ability to spark ideas that could be helpful to address societal needs, which made technical and vocational educational training easy to learn and master. By ensuring that the knowledge and skills gained in TVET translated into marketable values for students and aspiring entrepreneurs, entrepreneurship education thereby provided leverage to the latter.

The Friedman Chi-squared test result is confirmed by the results of Hotelling's T-squared test, which are shown in Table 5. The F-statistics computed for the variables of entrepreneurship education as a catalyst for TVET showed a p-value of 0.000, which was less than the critical value of 5%, according to Table 5. This suggested that the education of entrepreneurs was, in fact, a driving force behind technical and vocational training. This demonstrated even more how the knowledge and skills students received through TVET may not be employable without entrepreneurship education. The value and relevance of their knowledge, training, and practice in Technical and vocational education and Training (TVET) were thus introduced to students through entrepreneurship education. This claim was pertinent to McCallum's (2019) opinion, which held that entrepreneurship education made trainees masters of their own affairs by leveraging the value and relevance of technical and vocational education to meet societal needs with significant return (UNESCO-UNEVOC 2019). It was necessary to confirm at this point whether the elements of entrepreneurship education catalyzed TVET. To be validated as a component of technical and vocational education and training (TVET), the test items in this instance were expected to have equal variance. This

resulted in the post-estimation test of Levene variances. statistics, also known as the test of homogeneity of

**Table 6 Post- Estimation Result Test of Homogeneity of Variances**

Variable	Levene Statistic	df1	df2	Sig.
Every graduate will have unhindered access to the abilities and information required to launch their own business thanks to entrepreneurship education.	5.827	28	502	.000
The goal of the entrepreneurship education curriculum is to give graduates the skills they need to launch their own small business.	2.890	28	501	.000
The institution must make sure that its entrepreneurship programmes have real-world applications that will help students launch their new businesses.	4.925	28	503	.000
It is thought that by encouraging the formation of new enterprises, entrepreneurship education can serve as a platform for addressing unemployment in local communities.	5.105	28	503	.000
Students who receive entrepreneurship education are better able to see self-employment as a viable graduate career option.	6.707	28	503	.000
Through internships at local businesses, the institution teaches graduates business skills as part of its entrepreneurship education programme.	8.580	28	498	.000
Graduates' ability to think critically and creatively is greatly influenced by the skills they acquire in entrepreneurship education.	5.827	28	503	.000
The organisation helps students launch their own enterprises by helping them create business plans, providing financial support, and expert guidance from business mentors.	6.240	28	503	.000
The organisation works with specialists in entrepreneurship to advance entrepreneurship education.	8.758	28	503	.000
The organisation invites business owners and professionals from various organisations to speak with students about their experiences.	6.504	28	503	.000
Graduating students are given the freedom to try things and fail so they can experience smart failures as a necessary component of learning.	7.247	28	503	.000
The school arranges for students to visit businesses in order to broaden their understanding of the subject.	4.869	28	503	.000

**Source: “Field Work (2023)” \*\* critical level of significance is 5%**

It was discovered by examining the data in Table 6 above that the elements of entrepreneurship education were, in fact, stimulants for technical and vocational education training (TVET). The basis for this inference was the observation that the critical value of 5% was significantly exceeded by the p-value of the Levene statistics computed for the test items, which was 0.0000. This demonstrated that the variance of the test items was equal, indicating that

the variables could have the same effect on TVET and potentially improve it if implemented properly.

### Conclusion and Recommendations

The study demonstrated that one significant factor in improving students' technical and vocational educational training was entrepreneurship education. Based on this, it is possible to conclude that technical and vocational education training (TVET) was





sparked by entrepreneurship education, demonstrating that without it, students may not have been able to access the value, relevance, and addition of their technical and vocational education training. Consequently, TVET became beneficial through entrepreneurship education. The National Board for Technical Education must guarantee that entrepreneurship education is included in the technical college's core curriculum. This is required to guarantee that the students learn pertinent material that enhances their coursework. The different technical colleges need to make sure that all students in the schools receive instruction on entrepreneurship. The government needs to support the expansion of entrepreneurship education in schools by making sure that sufficient funds are available for practical entrepreneurship training

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