International Journal of Vocational Education and Training

Volume 26
Number 2
Summer 2021

Luke J. Steinke
Editor

Official Publication of the
International Vocational Education and Training Association
www.iveta.global

IVETA

INTERNATIONAL VOCATIONAL EDUCATION AND TRAINING ASSOCIATION

As a refereed journal, the *International Journal of Vocational Education and Training* depends on qualified individuals to serve as manuscript reviewers. So as not to overwork our reviewers, we need some of you to join us for a one-year term.

If you have a record of publications, research experience, and an interest in gaining additional practice in the use of the Publication Manual of the American Psychological Association, please email your vita to Dr. Luke Steinke, IJVET Editor, Eastern Illinois University, 600 Lincoln Ave, Charleston, IL 61920. Email: lsteinke@iveta.global

International Journal of Vocational Education and Training

Volume 26, Number 2

The *International Journal of Vocational Education and Training* is the official refereed publication of the International Vocational Education and Training Association (IVETA). Regular individual membership dues are US $50.00 per year. For subscription information, change of address, or to purchase additional copies of the journal, contact us at: https://iveta.global/contact/

International Journal of Vocational Education and Training

Volume 26, Number 2

International Journal of Vocational Education and Training

Volume 26 • Number 2 • 2021

Table of Contents

Contributors

Dr. Hassan Abdullahi Muhammad is currently a Senior Lecturer at Federal University of Technology, Minna, Nigeria.

Jiya Umar Mohammed is currently the Deputy Director of the FCT Department of Science & Technology in Abuja.

Dr Judith A. Kanu is currently the Deputy Director for the Curriculum Development Centre, Nigerian Educational Research and Development Council (NERDC), Sheda, Abuja, FCT, Nigeria.

Dr. Egbita Ugbalu Attaochu is currently the Chief Research Officer for the Nigerian Educational Research and Development Council (NERDC), Sheda, Abuja.

Dr. Benjamin Onoriode Irikefe is currently a Managing Consultant for Scotchville Industrial Consortium Limited.

Mohamed Mustafa Elnour Ahmed is currently is the Department Head for Chemical Skills at Jubail Technical Institute, Sector of Colleges and Institutes, Royal Commission for Jubail.

Abdulrazak Umar Mu'azu currently works within the Department of Agricultural Education at the Federal College of Education (Technical), Gusau, Nigeria.

Ogunkelu Maria Oluwatoyin is currently a Lecturer at Yabatech College of Technology, Epe campus, Epe, Lagos, Nigeria.

Oludolapo Jaiyeola Onipede is currently a Lecturer at Yabatech College of Technology, Epe campus, Epe, Lagos, Nigeria.

Yinusa Oyeniran Jinadu is currently a Lecturer at Yabatech College of Technology, Epe campus, Epe, Lagos, Nigeria.

Anslem Njoku Chiso is currently a Lecturer at University of Nigeria Nsukka.

Oladimeji Obembe is currently a Lecturer at Yabatech College of Technology, Epe campus, Epe, Lagos, Nigeria.

Rumyana Shalamanova is the Chairperson of Know and Can Association, Bulgaria. She has about 30 years' experience as a teacher and trainer in formal and non-formal education.

Message From the Editor

Thank you for taking the time to read the second issue of the 26th volume of the International Journal for Vocational Education and Training. As the world begins to slowly recover from a worldwide pandemic, we see that many things have likely changed for good. More than ever, the field of Technical Vocation Education and Training (TVET) is needed to help as individuals change occupations, vocations shift, and global markets shift in priority and scale. This publication has always been unique is that it offers a global perspective on TVET, with articles and researchers participating from all over the world.

This issue touches on several TVET issues within such countries and Saudi Arabia and Nigeria. These articles feature topics ranging from Nigerian issues related to student achievement and interest in science and technology subjects, as well as work discussing the use of TVET to work towards sustainable growth within Nigeria. There is also an article featuring the use of TVET to combat violence within Nigeria. Another article addresses the use of TVET as a key to strategic development within Saudi Arabia. Finally, this issue includes a special feature article. This article describes an EU funded project to provide innovative tools and resources which will improve educators' abilities to develop in their students.

As with many of our past issues, several of the authors are from countries across the world and English is not their first language. We have done our best to assist all our authors in correcting any spelling or grammatical issues to ensure their research is as effectively presented as possible. Due to the volume of manuscripts we receive, it is possible that the authors and the editorial staff overlooked some errors. We thank you for your understanding and patience in this regard.

As we work through publishing another issue of the journal, I would again like to thank everyone that made this issue possible. I truly appreciate everyone's patience, understanding, and support. As always, we are looking for both those interested in serving as reviewers for upcoming issues of the journal, as well as those looking to publish quality TVET research. I encourage anyone interested in serving as a reviewer for the journal or publishing their work in the journal to contact me at lsteinke@iveta.global.

Luke J. Steinke, PhD

Editor—International Journal for Vocational Education and Training

EFFECT OF PLACE-BASED LEARNING METHODS ON STUDENTS' ACHIEVEMENT AND INTEREST IN BASIC SCIENCE AND TECHNOLOGY IN MINNA, NIGER STATE

Hassan Abdullahi Muhammad, Jiya Umar Mohammed, Judith A. Kanu, and Egbita Ugbalu Attaochu

ABSTRACT

The study investigated the effect of place-based learning method on students' achievement and interest in basic science and technology. Place-based learning allows students to discover specific information by themselves before they make generalization. Six research questions and six null hypotheses guided the study. Quasi-experimental design was adopted for the study, specifically, non-equivalent control group design. The study was carried out in Minna Education Zone of Niger State. The sample for the study comprised of 80 JSS II students from two intact classes in two secondary schools in Minna Education Zone of Niger State, drawn using multistage sampling techniques. The experimental group were taught using place-based learning method, while the control group was taught using conventional lecture method. The treatments lasted for four weeks. Two instruments were used for data collection in the study namely, Basic science and technology Achievement Test (BSTAT) and Basic science and technology Interest Inventory Scale (BSTIIS). Data collected were analyzed using mean, standard deviation, and Analysis of Covariance (ANCOVA). The results revealed that place-based learning instructional method was superior to conventional instructional method in facilitating students' achievement and interest in basic science and technology. There was no significant difference in the mean scores of male and female students in basic science and technology after the treatment, although male students performed slightly better than their female counterpart. On the test of interaction, it was revealed that mode of instruction (method) and gender had a significant ordinal interaction effect on students' achievement and interest in basic science and technology. Place-based method was more effective than the conventional method. Based on the findings of the study, the educational implications of the findings were highlighted, and the following recommendations were proffered among others: that science teachers, and science teacher educators should adopt place-based learning instructional method when teaching to enhance students' achievement and interest in basic science and technology. Finally, the limitations of the study and suggestions for further studies were made.

Keywords: Place-based learning, basic science and technology, achievement, interest

INTRODUCTION

Science is a systematic enterprise that builds and organizes knowledge in the form of explanations and predictions about the universe. Science education on its own is the field concerned with sharing science content and process with individuals not traditionally considered part of the scientific community. The target individual may be children, college students or adult within the public. The field of science education comprises science content, some social sciences, and some teaching Pedagogy (Berube, 2008). The standard for basic technology provides exceptions for the development of understanding for students throughout their entire course of the study.

The National Policy on Education encourages all processes geared towards producing educators and scholars that will encourage the spirit of inquiry (FME.2008); One of the objectives of primary and junior secondary school Education in Nigeria is to inculcate in children permanent literacy and numeracy and the ability to communicate effectively.

The teacher's role in a student-centered learning environment is, at most, one of facilitator and guide. The students are in control of their own learning and the power and responsibility are the students' concern. Learning may be independent, collaborative, cooperative and competitive. The utilization and processing of information is more important than the basic content. Learning takes place in relative contexts and students are engaged in constructing their own knowledge (Furtak, 2010). The teacher who utilizes the student centered method effectively is constantly on the move. The teacher may be engaged with the students as a classroom collective, individually or in groups. Their involvement would include questioning, disciplining, guiding, validating, monitoring, motivating, encouraging, suggesting, modeling, and clarifying (McKenzie, 2005). This student-centered method is in line with the National Policy on Education.

Places are localities that can be explained meaningfully by the human experiences that take place in them. The sense of place reflects a set of meanings and attachment to places assigned by individuals or groups (Semken, 2015). Personal experiences in a place have a significant impact on the sense of place. Moreover, the level of individuals' sense of their local environment could affect their recognition of other environments. Educational activities play an important role in the recognition of the local environment and sense of place. Therefore, teachers should be the creators of the curriculum instead of being the implementers of curricula developed by others. They should be able to establish connections between students' performance standards determined by region or district and the unpredictable events that could occur outside the classroom. Teachers should neglect the hypothesis which premises that suitable education can only be conducted in classrooms (Smith, 2012). By adopting the democratic education perspective, schools should promote the meaningful introduction of the place-building process to the students (Gruenewald, 2013). This can be achieved through a place-based perspective. Place-based pedagogies are needed, since they can directly affect citizen education and affect the welfare of the social and ecological places where individuals

live (Gruenewald, 2013). This reinforces the necessity of examining place-based education.

Place-based education is used in several fields of education for different purposes. According to Woodhouse and Knapp (2000), place-based education refers to community-focused schooling, ecological education, and bioregional education. Although place-based education is rooted in environmental education, this approach can be distinguished from conventional environmental education, because the pioneers of place-based education focused on both social and natural environments (Smith, 2007). In fact, five thematic models were mentioned in place-based education; these included cultural studies, nature studies, real-world problem solving, internship and entrepreneurial opportunities, and induction into community processes (Smith, 2002). Thus, place-based education is an approach based on the natural environment; it is also considered a growing trend in the wide landscape of education reform (Resor, 2010). The place-based education method is an interdisciplinary and experienced learning approach which uses the local environment and society (Kuwahara, 2010). In other words, place-based education can be identified as an educational approach which uses the local environment for its education and learning context. The primary objective of place-based education is to encourage students to get interested in their local society and allow them to take action to build a better future for their community (Ciardi, 2016). Place-based education is grounded in resources, issues, and values of the local community and focuses on using local community as an integrating context for learning. By enhancing the growth of cooperation between schools and their communities, the place-based education method not only helps student boost their achievements but also improves the quality of the community's environmental, social, and economic welfare simultaneously (Powers, 2004).

Achievement according to Adeyemi (2008) is the scholastic standing of a student at a given moment. It has to do with the successful accomplishment of goal(s). The purpose of testing an achievement is to help the teacher and the students evaluate and estimate the degree of success attained in learning a given concept. It is also useful in testing the retention of information and skill. It is equally appropriate in determining the efficiency of instruction. One of the issues at stake in education today is students' achievement measure in relation to teaching and the overall success of learning outcome, use of place-based learning teaching method in teaching simple machine by basic science and technology teachers may make Basic science and technology lesson objective stimulating and interesting to the students.

Interest is an important variable in learning because when one is interested in an activity, one is likely to perform positively. Chukwu (2011) stated that interest can be expressed through simple statement made by individuals of their like and dislikes. Lack of interest according to Obodo (2012) may be caused by uninteresting teaching methods. Also, Obodo (2012) described interest as the attraction which forces or compels a child to respond to a particular stimulus. This point that a child develops interest if a particular stimulus is attractive and arousing or stimulating. This shows that interest comes as a result of eagerness to learn not by force (Okwor, 2017). The development of interest in basic science and technology as an objective of the basic science and technology teaching, may likely promote achievement in the course. Place -based learning method uses the same idea as scientists do when they conduct experiment,

thereby making the students become mini scientists. When students are learning about inquiry they should become familiar with the processes used by scientists and the new knowledge that results. Okwor (2017) classified place-based approaches into guided, unguided/open, and modified/coupled inquiry. Our interest from the above information is on place-based learning. The researcher wishes to investigate the above teaching methods on student's achievement and interest in junior secondary school basic science and technology, irrespective of gender.

Statement of Problem

There is high rate of poor achievement of students in basic science and technology in Junior Secondary School Certificate Examination (JSSCE) over the years. This could be as of the teachers use ineffective methods and strategies in science teaching which among other factors have contributed to the student's poor achievement in basic science and technology at the junior secondary school. This poor achievement in integrated science has necessitated the need for basic science and technology in junior secondary school by the Federal Government. The available literature on methods of teaching in science education suggests the need to employ new and innovative teaching strategy such as place-based learning method.

Since basic science and technology is a new area in the Nigerian system of education, it evolved from integrated science which was reviewed to provide a holistic presentation of science and technology with the theme ''you and technology''. There is need to explore more into the best methods of teaching specific topics in basic science and technology in other to enhance students' achievement. Therefore, the problem of this study is posed as a question; what is the effect of place-based learning and lecture teaching methods on student's achievement and interest in basic science and technology?

Purpose of the Study

1. The effects of place-based learning and lecture teaching methods on students' mean achievement scores in basic science and technology.
2. The effects of place-based learning and lecture teaching methods on students' mean interest scores in basic science and technology.
3. The influence of gender on mean achievement scores of students in basic science and technology.

Research Questions

1. What is the relative effect of place-based learning and lecture methods on students' mean achievement scores in basic science and technology?
2. What is the relative effect of place-based learning and lecture methods on students' mean interest scores in basic science and technology?
3. What is the influence of gender on mean achievement scores of students taught basic science and technology using place-based learning and lecture method?

Hypotheses

The following null hypotheses (Ho) were formulated and tested at 0.05% level of significance:

H_{O1}**:** There is no significant difference in the mean achievement scores of students taught basic science and technology using place-based learning and lecture methods.

H_{O2}**:** There is no significant difference in the mean interest scores of students taught basic science and technology using place-based learning and lecture methods.

H_{O3}**:** There is no significant difference in the mean achievement scores of male and female students taught basic science and technology using place-based learning and lecture methods.

METHODOLOGY

The design for the study was quasi-experimental design. The study was carried out in Minna Education Zone of Niger State. All the Junior Secondary Two (JSS2) students in all the government owned coeducational secondary schools in Minna Education Zone formed the population of the study. Intact classes of eighty (80) JSII students formed the sample for this study. Multi-Stage sampling technique was used for the study.

Two instruments: Basic science and technology Achievement Test (BSTAT) and Basic science and technology Interest Inventory Scale (BSTIIS) was developed by the researcher to collect data for the study. The BSTAT consists of 30 multiple choice items with four options, A, B, C, and D. Each of the items in the BSTAT carries one mark. The test items were developed using basic science and technology textbooks based on the content to be taught in the lesson. The research instruments (Basic science and technology Achievement Test and Basic science and technology Interest Inventory Scale) faced validation by two experts from the Department of Technology Education, School of Science and Technology Education, Federal University of Technology, Minna. The Basic science and technology achievement test was subjected to trial testing. The trial testing was carried out at Government Secondary School Chanchaga which is not within the study area. The school was excluded from the schools to be sampled for the study of population. The trial testing was done by administering 20 copies of the BSTAT to the students and the data obtained from the responses of the students will be used to estimate the reliability of the instrument. The reliability of the BSTAT was determined using Kuder-

Richardson (K-R20) formula. The trial testing to enable the researcher to determine the clarity of the test items, its readability, appropriateness, and adequacy as well helped to determine the appropriate time for the test. An internal consistency of 0.091 was obtained.

Basic science and technology teachers in the sampled schools helped the researcher in collection of data. The teachers collected the data before and after the experiment, after which the researcher collected and organize the data accordingly for data analysis. The scores obtained from the pre and posttest was analyzed using mean and standard deviation for research questions and Analysis of Covariance (ANCOVA) for testing the hypotheses at 0.05% level of significance. ANCOVA was used to test the hypotheses because the experiment involved pretesting of the subjects. ANCOVA was used to remove the effect of the covariate or pretest.

RESULTS

Research Question One

What is the relative effect of place-based learning and lecture method on students' mean achievement scores in Basic science and technology?

Table 1. Mean (X) and Standard Deviation (SD) Scores of Students Mean Achievement Scores in Basic Science.

Group	N	Pre-test		Post-test		Mean gain score
		X_1	SD_1	X_2	SD_2	X
Place-based learning	47	38.96	11.63	65.72	16.63	26.76
Lecture method	33	41.79	10.96	57.89	10.51	16.1

Table 1 revealed that students taught Basic science and technology using place-based learning method had mean score of 65.72 with standard deviation of 16.63 while the mean achievement score of students taught with conventional lecture method was 57.89 with standard deviation of 10.51. Also, the place-based learning group had a gain score of 27.51 over the lecture group who had a gain score of 16.1. Students taught Basic science and technology using place-based learning method therefore, performed better than students taught using the conventional lecture method.

Research Question Two

What is the relative effect of place-based learning and lecture methods on students' mean interest scores in basic science and technology?

Table 2. Mean (X) and Standard Deviation (SD) SX cores of Students' Mean Interest Scores in Basic science and technology.

Group	N	Pre-test		Post-test		Mean gain score
		X_1	SD_1	X_2	SD_2	X
Place-based learning	47	1.55	0.65	2,56	0.66	1.01
Lecture method	33	1.51	0.63	2.24	0.94	0.73

Data on students' interest in table 2 revealed that students taught Basic science and technology using place-based learning method had mean interest score of 2.54 with standard deviation of 0.66 while the students taught with conventional lecture method had mean interest scores of 2.23 with standard deviation of 0.94. The students taught basic science and technology had gain score of 1.01 while their counterpart taught using conventional method had mean gain score of 0.73. This revealed that students taught basic science and technology using place-based learning method therefore, had higher interest in Basic science and technology than students taught using the conventional lecture method. Therefore, guide place-based method is superior to conventional method.

Research Question Three

What is the influence of gender on mean achievement scores of students taught basic science and technology using place-based learning and lecture method?

Table 3. Mean (X) and Standard Deviation (SD) of influence of gender on students' mean achievement score in Basic science and technology.

Gender	N	Pre-test		Post-test		Mean gain score
		X_1	SD_1	X_2	SD_2	X
Male	42	41.08	11.23	65.11	15.58	24.03
Female	38	39.26	11.57	60.11	13.95	20.85

Table 3 revealed mean achievement score of 65.11 with standard deviation of 15.58 for male students, while the female students had mean achievement score of 60.11 with standard deviation of 13.95. Male students had mean gain score of 24.03 in basic science and technology while their female counterparts had mean gain score of 20.85. Male students, therefore, performed better than their female counterparts in basic science and technology.

Hypothesis 1

There is no significant difference in the mean achievement scores of students taught basic science and technology using place-based learning and lecture methods.

Table 4: Analysis of Covariance of Students' Mean Achievement Scores in Basic science and technology.

Source of Variation	Sum of Squares	df	Mean Sq	f	Sig.
Corrected model	11613.487	4	2903.372	37.258	0.000
Intercept	2623.714	1	2623.714	33.669	0.000
Pretest	9974.333	1	9974.333	127.996	0.000
Method	2128.256	1	2128.256	27.311	0.000
Gender	146.749	1	146.749	1.883	0.174
Method x Gender	1.156	1	1.156	0.015	0.903
Error	5844.501	75	77.927		
Total	329833.000	80			
Corrected total	17457.987	79			

Data in table 4 showed that there is a significant mean effect for mode of instruction on students' achievement in basic science and technology f (1, 80) p<.000. The null hypothesis therefore was rejected, indicating that there was significance difference in the mean achievement score of students taught basic science and technology using place-based learning method and those taught using conventional instructional method.

Hypothesis 2:

There is no significant difference in the interest scores of students taught basic science and technology using the two methods.

Table 5: Analysis of Covariance of Students' Mean Interest Scores in Basic science and technology.

Source of Variation	Sum of Squares	df	Mean Sq	f	Sig.
Corrected model	30.339	3	10.113	38.304	0.000
Intercept	430.050	1	430.505	1628.871	0.000
Method	2.875	1	2.875	10.888	0.001
Gender	27.852	1	27.852	105.493	0.000
Method x Gender	2.585	1	2.585	9.789	0.002
Total	522.504	80			
Corrected total	50.404	79			

Data in table 5 showed that there is a significant mean effect for mode of instruction on students' interest in basic science and technology f (1, 80), p<.001. The null hypothesis therefore was rejected, indicating that there was significance difference in the mean interest score of students taught basic science and technology using place-based learning method and those taught using conventional instructional method.

Hypothesis 3

There is no significant difference in the mean achievement scores of male and female students taught basic science and technology using the place-based learning method and conventional method.

Table 4 revealed no significant mean effect of gender on students' achievement in basic science and technology f (1, 80), p> .174. The null hypothesis was not rejected, indicating that there was no significant difference in the mean achievement scores of male and female students taught basic science and technology using place-based learning method.

Discussion of Results

The place-based learning method of instruction was superior to the conventional method in facilitating student's achievement in basic science and technology. The differences in performance might have been because the students were required to find out facts for themselves, thereby imbibing the scientific processes involved in learning basic science and technology, which enabled them to perform better than their counterparts taught basic science and technology using conventional method. When the students generate their own question, analyze, and discuss their findings and finally construct their understanding they seemed to understand their own information better than the ones the teachers introduced to them. The place-based learning method may have been more effective because the instructions were characterized by active student's involvement, thereby capturing the interest of the students, and maximizing comprehension of the subject matter. This is in line with the observations of Nwagbo (2009) and Ibe (2014) who indicated that place-based approaches prove to improve student's achievement in sciences more than the traditional instructional methods like lecture,

demonstration. Also, Timothy and Rushmere (2009) revealed a significant difference between inquiry and lecture method in improving student's performance in biology achievement test in favor of the place-based approach.

The findings of this study are in line with that of similar studies by Semken (2015) who carried out a study on the effects of place-based learning and demonstration methods of teaching on science process skills acquisition among secondary school biology students. Their finding revealed that the student taught through place-based learning method performed significantly better than those taught through demonstration and conventional (lecture) methods.

Results obtained from the study showed that students taught with place-based learning method had high interest in basic science and technology than their counterparts that were taught with conventional method.

The finding agrees with that of Ezeudu (2010) who found out that student centered instructional approach enhances student's interest in science. Okoro (2011) found out that student's interaction pattern promotes student's interest in biology than the conventional instructional approach. Students perform better when they work in groups, they share ideas. This increases their interest especially when taught basic science and technology using place-based learning method.

The results of the study showed that male students performed better than their female counterparts in basic science and technology (Mandore, 2012). This could be because of the different socialization processes of male and female students in which the male persons are expected to explore their environment while the female ones are to conform or maintain their existing environment notwithstanding, male students performed significantly better than female students in basic science and technology. The finding supports the finding of Nwagbo (2009) who found out that male students performed better than their female counterparts in biology. The finding did not support that of Rushmere (2009) and others who found that girls achieved more than boys in science subjects, and that female learners show some superiority over male learners. Obiekwe (2008) and Okoro (2011) also found that male students achieve higher than their female counterparts in science, Okeke (2017) and Nzewi (2010), are of the view that females achieve as high as their male counterparts when given equal opportunities. Ibe (2014) reported that there was no significant difference in the achievement of male and female students used to determine the effect of place-based learning and demonstration methods on science process skill acquisition among secondary school Biology students. Males perform better than their female counterparts when taught with place-based learning method probably because males tend to explore their environment more than the females who tend to conform to the environment they found themselves.

Conclusion

From the results obtained in the study on the effects of guided inquire method on student achievement in basic science and technology, it was found out that:

- Students taught basic science and technology using place-based learning method performed better than their counterparts taught basic science and technology using the lecture method.
- Students taught basic science and technology using place-based learning method had higher mean interest score in basic science and technology than their counterparts taught basic science and technology using the lecture method.
- Gender did not significantly influence students' achievement in basic science and technology, even though the posttest mean scores of male students was slightly higher than that of their female counterparts.

RECOMMENDATIONS

Based on the findings of this study, the following recommendations are made:

- Because the place-based learning method was more effective in teaching basic science and technology and enhancing student's achievement and interest in basic science and technology, the Ministries of Education should ensure that textbook authors incorporate place-based learning methods in the instructional methods for secondary schools.
- Mode of instruction had no differential effects on male and female students' achievement in basic science and technology. Hence, teacher should make teaching and learning of science gender unbiased.
- Ministry of Education should ensure that their teachers are trained regularly on the use of innovative instructional approaches e.g., place-based learning method.

REFERENCES

Adeyemi, T. O. (2008). Predicting student's performance in junior secondary certificate examination in Ondo State, Nigeria. *Humanity and social sciences journal* 3(1); 26-36.

Berube, C. T. (2008). The Unfinished Quest; the Plight of Progressive Science. *Education in the age of standards charlotte*, N. Iinformation age, inc.

Chukwu, J.O. (2011). Effect of Selected games on Primary School Pupils' Achievement and Interest in subtraction Operation *Unpublished PhD Thesis* Faculty of Education U.N.N.

Ezeudu, F.O. (2010) Effect of concept map on achievement interest and retention in selected units of organic chemistry. *Unpublished PhD Thesis*, U.N.N. Science Education.

Federal Ministry of Education, (2008). The Development of Education, *National Report of Nigeria Abuja*. http://www.emeraldinsight.com/10.1108/00242539410134589

Furtak, O. A. (2010). Attitude of students towards the use of cooperative, competitive and individualistic learning strategies in Nigeria senior secondary school physics. *Australian journal of teacher Education volume 34(1),* 126-132.

Gruenewald, D. (2013). Foundations of place: A multidisciplinary framework for place conscious education, American Educational Research Journal, 40(3), 619-654. http:// www.emeraldinsight.com/10.1108/00242539410134589

Ibe, E. (2014). Effect of Place-based learning and Demonstration on Sciences Process Skills acquisition among biology secondary school student. *Unpublished M.ED Thesis.* Faculty of Education. University of Nigeria Nsukka.

Kuwahara, J. L. H. (2010). Effectiveness of place-based science curriculum projects situated in Hawaiian and Western cultural institutions at an urban high school in Hawai'i (Unpublished Doctoral Dissertation). University of Hawai'i, Manoa.

Mandore, A. k. (2012). Effect of constructivist based instructional model on acquisition of science process skill among junior secondary students. *Unpublished Med project department of science education*, University of Nigeria, Nsukka.

McKenzie, M. (2011). Second thoughts on post critical inquiry. *Environmental Education Research*. 11(4), 453-463. National Policy on Education (2016).

Nwagbo, C. R. (2009). Effect of guided- discovery expository teaching methods on the attitude towards biology students of different levels of scientific literacy, *Journal of science teachers association of Nigeria*, 66-73.

Nzewi, U.M. (2010). It's all in the brain of gender and achievement in science and technology education. *51st inaugural lecture of the University of Nigeria Nsukka,* 18-32.

Obiekwe, O.F. (2008). Effect of constructivist-based Instructional Model on Senior Secondary Students Achievement in Biology. *STAN proceeding of the 50th anniversary conference.*

Obodo, H. (2012). Relationship between teacher effectiveness and group discussions in SS practical agricultural science in Imo state. *Unpublished M.Ed. Thesis*, Imo state University, Owerri.

Okeke, E. A. (2017). Making Science Education Accessible to all *23rd inaugural lecture of the University of Nigeria Nsukka.*

Okoro, A U. (2011). Effect of interaction on achievement and interest in biology among secondary school students in Enugu State Nigeria. *Unpublished M.Ed. Project*, University of Nigeria, Nsukka. Science Education.

Okwor, F. A. (2017). Effect of Guided Discovery and Place-based learning Teaching Methods on Students' Achievement in Agricultural Science. *Unpublished PGDE Project* University of Nigeria, Nsukka. Education foundation.

Powers, E.L. (2004). An evaluation of four place-based education programs. *The Journal of Environmental Education*. *35*(4). 17-32.

Rushmere, A. (2009). Fermenting the free folk school: tending a culture of place-based ecological learning and living (Unpublished Master's Thesis). Simon Fraser University, Burnaby.

Ciardi. M. R. (2016). Place-based education in an urban environment. Museum International. 58(3). 71-77.

Semken, S. (2015). Sense of place and place-based introductory geoscience teaching for American Indian and Alaska Native undergraduates. *Journal of Geoscience Education, 53* (2), 149-157.

Smith, G.A. (2007). Place-based education: breaking through the constraining regularities of public school, *Environmental Education Research, 13*(2), 189-207.

Smith, G.A. (2012). Place-based education learning to be where we are. Phi Delta Kappan, April, 584-594.

Timothy, B.T., & Awodi, S (2011). Effect of inquiry and lecture method on Secondary School, Science Instrument, *Zaria Journal of Studies in Education*, 1 (1), 29-33.

TECHNICAL, VOCATIONAL EDUCATION AND TRAINING (TVET): A TIME-HONOURED PLATFORM FOR COMBATING VIOLENT CRIMES AND VOLATILE ACTIVITIES IN NIGERIA

Benjamin Onoriode Irikefe

ABSTRACT

The objective of this paper is to underscore the importance of Technical, Vocational Education and Training (TVET) as veritable tools for addressing and stemming the conscription, perpetuation and proliferation of myriads of criminalities across Nigeria, especially among the youths. It has been established that the instrumentality of TVET, especially in the form of short-term vocational training, provision of vocation-specific starter packs and post-training support, can go a long way in decreasing unpleasant activities in communities. It has also been proven that skill acquisition training and empowerment programmes are a vital platform for taming pervasive unemployment, burgeoning poverty, escalating insecurity, and destabilising communities in countries like Nigeria. Situational analysis reveals that due to the shortage of vocational skills among the youth, some of them retrogressed to engaging in various heinous and horrendous crimes as a means of livelihood. These crimes include armed banditry, commercial hostage-takings & kidnappings, contract killings & assassinations, armed robberies, sponsored riots, criminalised agitations, internet frauds, thuggery, trafficking in illegal arms, faking of goods, services & products, livestock rustling, blackmailing, sponsored protest marches, illegal bunkering, sea piracy, oil facilities vandalization, setting up & operating crude illicit oil refineries, extortions, collection of unlawful levies and so on. For effectiveness, the TVET implementation strategies entail vocation-specific training, entrepreneurship development training, functional soft & life skills training, training in the usage & application of vocation-specific starter packs, the actual provision of starter packs and post-training support. The paper also advocates the teaching and learning of vocation specific trades (VSTs) or micro, small and medium enterprises (MSMEs) alongside conventional academic curriculums to get a liveable wage after graduation. Livelihood enhancement is the only key to poverty reduction as the UN has declared the next ten years as a decade of action on achieving sustainable development goals (SDGs) across the globe.

Keywords: TVET, Skill Acquisition Training, Post-Training Empowerment, Violent Crimes, Insecurity.

Background

In the public domain, the security situation in Nigeria is not only problematic but also affecting many innocent individuals. Incidents of insecurity and the incidence of multi-dimensional crimes appear to increase every day; in all shades and forms (Oshita, Alumona & Onuoha, 2019).

The worsening youth unemployment figures have not helped matters (Adebimpe, 2021). Nevertheless, the condition is not hopeless. Nigeria is a great country blessed with rich human, material and natural resources (Duruji & Dibia, 2017). It is evident that with much emphasis on training and vocational education, the Nigeria youths will contribute considerably to economic growth, livelihood and poverty eradication within the framework of the SDG's.

Various studies have shown that educating youths and empowering them with practical skills is significant in stemming the socio-economic consequences of joblessness (Adebayo, 2013; Ogbunaya & Udoudo, 2015). While an increase in education has a substantial impact on crime reduction, in cases where the youths do not have requisite job skills, even with formal education, there is a tendency to degenerate into criminalities (Lochner & Moretti, 2004). As such, through Technical and Vocational Education and Training (TVET), youths would not only attain some form of education but obtain the requisite job skills to be employers of labour (Ogbunaya & Udoudo, 2015). This has a great tendency to reduce criminalities among the youth populace in a youth-centric state like Nigeria.

It is pertinent to state that education must be repositioned and strengthened for TVET to achieve its envisaged multiple objectives. This paper, therefore, encourages the use and deployment of TVET as a deliberately structured platform for stemming the commissioning, perpetuation and proliferation of myriads of criminalities across Nigeria, especially among the youths.

Statement of the Problem

The current security situation in Nigeria is not only dire but unacceptable. International rankings put Nigeria at 107 out of 167 countries globally in 2019, on the security index. According to Ewetan and Urhie (2014: 52), "there is no country in the world that can attain meaningful socio-economic development in a situation where insecurity is prevalent." The insecurity across Nigeria has considerably reduced the socio-economic prospects of the country. This has led to general social tension, needless population dislocations, the general atmosphere of mistrust, anxiety, worsened poverty, discouragement of both local and foreign investments and investors. Consequently, these inimical occurrences have snowballed to the commissioning and perpetuation of myriads of heinous and horrendous crimes.

In contemporary times in Nigeria, there has been an increase in polytechnic and university graduates into the economy—with a minimum of 600,000 graduates annually (Babalobi, 2019; Ekeruche, 2019). While there is not enough job placement for the graduates, according to Lochner & Moretti (2004), there ought to be a reduction in criminalities with the increase in educated youths. In Nigeria, however, the opposite is the case. The increase in criminalities

among educated youths may be attributed to the curriculum that does not promotes vocation specific enterprises which graduates can use to get a liveable wage after graduation.

Okoro (2018), averred that where there is an increase in graduates who have not been taught vocational or business education, they may not know how to be self-employed. It will vastly increase the national unemployment index. Consequently, there is bound to be an increase in crimes and insecurity with a high unemployment rate. Aminu (2019), reported that the rise in unemployment was due to job mix-match. Although it is in the public domain that governments, especially the Federal Government of Nigeria, is making concerted and frantic efforts to address the insecurity situation, it appears the manifestations of insecurity keeps creeping in. Ekeruche (2019), noted that "despite these interventions, the livelihoods of many educated Nigerians are threatened."

Considering the strategic significance of Technical, Vocational Education and Training (TVET), it has been established that TVET can be used to enhance the productive capacities of people (Ogbunaya & Udoudo, 2015; Okolocha, John-Akamelu & Muogbo, 2020). TVET can help youths and graduates generate income, create wealth to forestall or alleviate poverty and unemployment. The governments and other stakeholders in Nigeria have been carrying out some skill acquisition training initiatives, and there appear to have been mixed results (Uranta & Nlerum, 2017). Hitherto the preceding, the adequate way to carry out skill acquisition training and empowerment programmes to abate insecurity remains. This study addressed the problem by encouraging newer 2021 frameworks that can ease the skill gap of the older TVET programs.

The Purpose of Study

This paper seeks to elucidate, re-professionalise, and expand Technical, Vocational, Education and Training (TVET) frontiers discussed in this study in line with contemporary realities in Nigeria. This could be regarded as a "New Normal TVET," which can serve as a platform for job and wealth creation, citizens economic empowerment and insecurity abatement by unveiling six (6) new time-tested Conceptual Models and Actualisation Frameworks. These include:

- Quadrant of Skill Acquisition (QSA).
- TVET-Quadrant of Skill Acquisition Implementation Linkage Model.
- Conceptual Model Depicting the Relationship Between Holistic Skill Acquisition Training and Empowerment Programme and Traditional TVET.
- Conceptual Model Depicting the "New Normal TVET".
- Conceptual Model and Framework for the Infiltration and Surrounding Conventional Academic Curriculums to Generate Vocation Specific Enterprises/ Trades.
- Conceptual Model Depicting the Positive Deliverables of the Generation, Teaching and Learning of Vocation Specific Trades (VSTs)/Micro, Small and Medium Enterprises Alongside and Within Conventional Academic Curriculums.

The idea is to scale up and align Traditional TVET with the prevailing conditions on-ground, especially in burgeoning unemployment and pervasive insecurity. Further details on the above Conceptual Models and Implementation Frameworks are elucidated in this study. The aim is to serve as a wake-up call to relevant trainers, sponsors and promoters of skill acquisition programmes.

REVIEW OF RELATED LITERATURE

Conceptual Review of TVET

As displayed in this paper's title, TVET is an acronym for Technical, Vocational Education and Training. As a concept, TVET has been defined and described by several entities and authorities.

According to the National Policy of Education (2004), Vocational and Technical Education is the acquisition of skills and techniques in a chosen occupation or profession to enable an individual to earn a living. It also demands the professional or expert use of hands. The National Policy on Education (2004) states that the objectives of vocational and technical education are:

i. To acquire vocational and technical skills.
ii. To expose students to career awareness by usable options in the “world of work”.
iii. To enable youths to have an intelligent understanding of the increasing complexity of technology.

The broad definition of TVET includes technical education, vocational education, vocational training, on-the-job training or apprenticeship training, delivered in a formal and non-formal format.

According to UNESCO-UNEVOC (2006), TVET is a broad term that refers to those aspects of educational processes involving the study of technologies and related sciences. It also comprises the acquisition of practical skills, attitudes, understanding, and knowledge relating to occupations in various economic and social life sectors in addition to general education. The goals of TVET encompass, amongst others, the provision of trained human resources in applied sciences, technology, business, advanced craft, and training and related skills for self-reliance and employment.

Classification of TVET

In the National Policy on Education developed by NERDC (Nigerian Educational Research and Development Council) (2004), they averred that TVET can be delivered in a formal and non-formal way. However, UNESCO-UNEVOC (2006), extended this classification and added the ‘informal’ form of TVET. In retrospect, TVET may be classified into three categories, formal, non-formal and informal.

Formal TVET. This refers to organized structured vocational education programmes provided with an approved public or private educational or training institution. They are structured in terms of defined curriculums, learning objectives and learning time frames, in such a manner that it constitutes a continuous "ladder" where one level leads to the next and finally to certification. In essence, formal TVET covers vocational education programmes that are offered by approved public or private institutions.

Non-Formal TVET. This type of vocational education and training often occurs outside the formal school system, either on a regular or ad hoc basis. This system has the advantage of short-term training duration. It is often occupation or vocation specific. The main emphasis is on acquiring practical skills for self-reliance or direct employment within a particular field. In Nigeria, the prescribed establishment that certifies trainers and training Vendors in the National Council for Management Development (NCMD). Such certified training vendors can use "partner training institutions" or various halls to conduct their training and thereafter certify the Graduands. Many trainers in Nigeria use non-formal platforms or venues to train the students.

Informal TVET. This is the type of vocational education that is provided by craft persons of different trades in the informal sector of the economy. It is specially referred to as vocational training or experience-based learning, and it is often carried out in the form of apprenticeship. In practice, Informal TVET is characterized by the non-existence of a formal curriculum as there is no properly designed scheme or method of training. The various master craft persons usually decide what the apprentice should learn out of the sheer experience. Frequently, graduates of informal TVET are not given any form of certification. Their former trainers may provide them with some form of financial or moral support so that graduates of informal TVET can be on their own, after they leave their masters.

Conceptual Review of Insecurity, Violent Crimes and Volatile Activities

Pervasive insecurity is one of the major problems besetting Nigeria as a country. According to Adegbami (2013), insecurity is peoples' relative feeling of the presence of social, economic, political, cultural and psychological fear. The deepening insecurity in Nigeria has led to the worsening of hunger and poverty. Nevertheless, Nigeria's current incidents revealed an increase in the incidence of insecurity and violent crimes.

While violent crimes occur, there is also the possibility that violent activities may result in causing violent crimes. Explosive activities may be defined as activities tending or threatening to break out into open violence, such as a volatile political situation, and protest. Adebayo (2013) noted that the youths are the most volatile when their energies are misdirected or channeled into wrong endeavors. A typical example is the #ENDSARS protest in October 2020. According to Ochi and Mark (2021), the non-violent protest carried out by youths against police brutality soon changed into a parade of looting and perpetuation of violent crimes. Albeit the protest was Police reform, the youth widened their demands based on the pervasive failure of the government to deliver equitable economic prosperity for its citizens and provide the youths with the relevant financial skills (Ojewale, 2020).

In retrospect, the relationship between insecurity, violent crimes, and volatile activities is somewhat interlinked and often perpetuated by the youth populace.

TVET as an Instrument of Economic Empowerment and Security Stabilization. It has been established that there is a very close interconnection or nexus between the economic empowerment of the citizenry of a locale or country and the security situation (Adebayo, 2013). It is very much in line with the adage that "an idle mind is the devil's workshop. When the residents and indigenes of communities have jobs or vocations to maintain their lifestyle, then they are less to get involved in criminal activities.

The truth is that no society, community, or country can be devoid of crime. TVET programs cannot remove all crime from neighborhoods, however it can be a very powerful tool to stabilize many of the communities being affected by violence.

The Niger Delta Region of Nigeria was a haven for militancy, kidnapping and countless heinous crimes. Part of the document used in creating the Presidential Amnesty Programme by Irikefe (2020) recommended using specialized skill acquisition training (TVET) to engage the youths. Oluduro and Oluduro (2012) reported that the Presidential Amnesty Programme's investment in vocational training and post-training empowerment has greatly reduced insecurity in the region.

TVET as a Tool for Promotion of Economic Empowerment. Economic empowerment in the form of an income-generating enterprise, trade or vocation helps keep the minds of individuals at peace and ease. Appropriately structured TVET programmes in the form of short-term vocational training accompanied with provision of vocation-specific starter packs provision, followed with available post-training support, have proven to be the "game-changer" in fostering rapid economic empowerment.

Role of TVET in Security Stabilization. TVET has the propensity of creating jobs, poverty reduction, and wealth creation which helps to reduce insecurity in a nation (Lawal, 2013; Ogbunaya & Udoudo, 2015; Okoro, 2018). When people in a society are meaningfully engaged, it helps to promote security stabilization. This is because engaged persons are less likely to be used by criminal elements.

TVET can enhance the productive capacities of people, generate income and create wealth to forestall or reduce unemployment and poverty. TVET interventions are one of the time-honored and veritable platforms that can be used to address the situation of pervasive insecurity and stabilize security.

SITUATIONAL ANALYSIS OF THE SECURITY SITUATION IN NIGERIA

Judging from the empirical snapshot of the situation in Nigeria, it is evident that:

- there is burgeoning unemployment amongst the citizenry, mostly the youths.
- there is an abundance of unemployed youth that can be pulled into criminal activities
- disgruntled individuals, power-hungry politicians, criminal gangs and organized

criminal elements and their cohorts are influencing the idle individuals to power their criminal infrastructure and ply their trades.

Early Warnings

Over the years, the author, has repeatedly emphasized to local and federal officials, the need for entry-level positions for Nigerian's youth. Failing to comply with this request, an individual will revert back to their old way of living a life of crime (Irikefe, 2020). It is significant to note that unpatriotic persons, criminal entrepreneurs, disgruntled individuals and power-hungry politicians can harvest the idle hands to foster their nefarious agendas or ply their trades.

Dimensions of Criminal Activities Reported

The shortage of vocational and entrepreneurial skills among youth population has had a negative effect on their career development and instead has pushed them more into a life of crime. A cursory inventory of criminal activities reported include armed banditry, commercial hostage takings and kidnappings, contract killings and assassinations, armed robberies, sponsored riots, criminalized agitations, cybercrimes, thuggery, trafficking in illegal arms, faking of goods, services and products, livestock rustling, blackmailing, sponsored protest marches, illegal bunkering, forceful shutdown of companies' operations and facilities, periodic blocking of companies' gates, aggressive requests for job slots for ghost workers, incessant demands on contractors to appease local deities before allowing them to work, forceful incarceration of companies' workers, unabating and unwarranted restiveness by community youths, abduction of contractor personnel during contract execution, abduction of government staff who came to monitor the execution of awarded contracts, snatching of ballot boxes during elections, deliberate disruption of meetings & campaign rallies, sponsored intimidation of political opponents, sponsored damage or destruction of properties, coordinated invasion of security force posts & barracks, sponsored invasion of prisons and releasing inmates, sponsored invasion of opponents' political party offices, disruption of civic education activities, involvement in militant and cult group activities, damage or vandalization of company's properties or assets, sea piracy, oil infrastructure vandalization, disruption of lawful operations of companies, blocking of access roads or waterways to work locations, setting & operating of illegal crude oil refineries, collection of illegal levies, involvement in activities aimed at rendering sections of the country ungovernable and inoperable, amongst others.

The cumulative effects of the criminal activities have hitherto worsened the unemployment situation in Nigeria. It has also scared away or discouraged investors (local and foreign) that would have helped to create the much-needed jobs for the citizenry.

TVET ACTUALIZATION STRATEGIES AND IMPLEMENTATION MODELS

TVET, if creatively applied as a sustainable human capital development tool, can foster robust

economic empowerment, wealth creation and employment generation. This, in turn, has the natural tendency of providing safe and secure environment for all in the community.

The models focused on in this study encompasses:

- Alignment of TVET with the Quadrant of Skill Acquisition (QSA).
- Advocating the teaching and learning of Vocation Specific Trades (VSTs) and Micro, Small and Medium Enterprises (MSMEs) which can be used individually or together in schools.

Alignment of the TVET Concept with the Quadrant of Skill Acquisition (QSA)

Quadrant of Skill Acquisition (QSA). The Quadrant of Skill Acquisition (QSA) is based on the doctrine that a holistic Skill Acquisition Training and Empowerment Programme (HOSAP) should comprise four components.

- Vocation Specific Training (VST).
- Entrepreneurship Development Training (EDT).
- Soft and Life Skills Training (SLT).
- Post-Training Empowerment and Support (PES).

This concept was arrived at after my involvement in training programmes in various sectors, clients and stakeholders spanning over two decades (Irikefe, 2017). It is depicted in Figure 1.

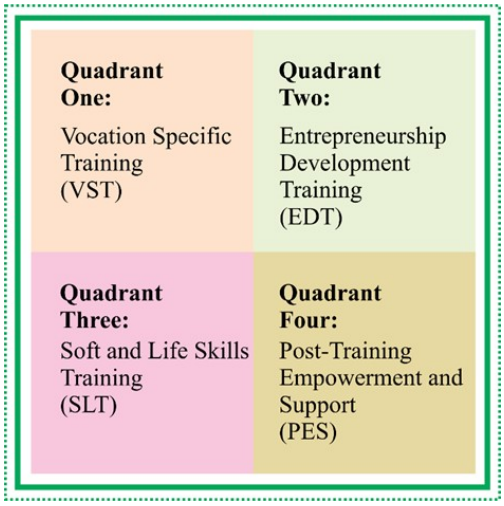

Figure 1. Quadrant of Skill Acquisition (QSA)

Scotchville Industrial Consortium Limited has been using the Quadrant as a "guidance framework" in implementing vocational training for almost ten years. The firm is one of the best in terms of the general effectiveness of skills training implementations. It has continued to increase the satisfaction of trainee beneficiaries and clients alike.

Connecting TVET with the Quadrant of Skill Acquisition (QSA). This study seeks to pigeonhole the TVET Concept into the Quadrant of Skill Acquisition (QSA) in actualizing the above conceptual model. This is as depicted in Figure 2.

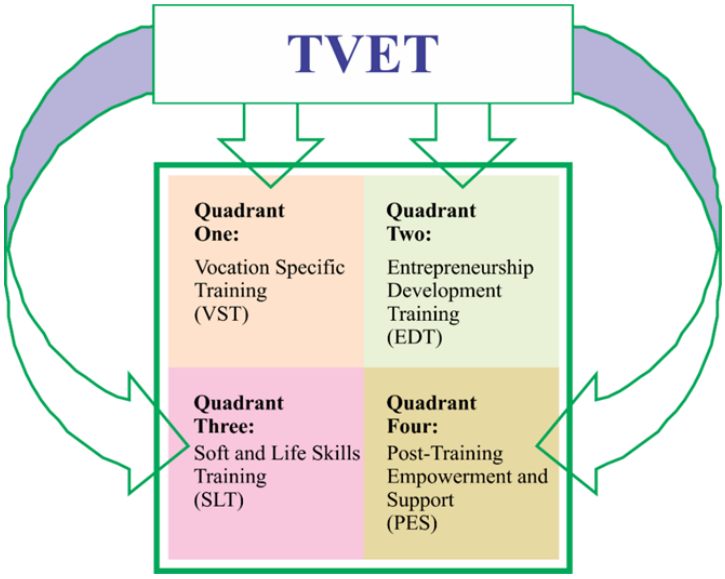

Figure 2. *Conceptual Model of the TVET-Quadrant of Skill Acquisition Implementation Linkage*

Exposition of the Components of the Quadrant of Skill Acquisition (QSA)

Based on the implementation framework, the constituent components of the Quadrant of Skill Acquisition (QSA) are Vocation Specific Training (VST); Entrepreneurship Development Training (EDT); Soft and Life Skills Training (SLT) and; Post Training Empowerment and Support (PES). The four components of a "Holistic Skill Acquisition Training Empowerment Programme" (HOSAP) are outlined below. Each component is exposited based on its applicability and significance below.

Vocation Specific Training (VST). The basic principle of actualisation is the same, irrespective of the vocation being undertaken by the student/trainee. This has to do with the impartation of knowledge by a teacher/trainer. The specific target areas covered include: Exposition of Vocation Course/Trade/Enterprise; Applicability of Vocation to Business/ Society; Vocation's Tools, Equipment and Materials; Vocation's Theoretical Exposition; Applicable Entrepreneurship Concepts; In-Class Practicals and Hands-on Training; Training on Vocation Value Chain; Vocation Specific Field Visits; Business Set-up Training; Vocation Marketing and Promotion; Starter Pack Utilisation and Application Training.

Entrepreneurship Development Training (EDT). Entrepreneurship Development Training encompasses the business or money-making aspect of the vocation/trade/ enterprise the trainee

is being trained on. It can be fashion design and tailoring, electrical installation, cosmetology and hairdressing; rickshaw *(Keke Marwa)*, maintenance and repairs, and so on.

Irikefe (2020), came up with twenty-two entrepreneurship development concepts that can be used to promote income generation or money-making out of any vocation/enterprise/trade being studied. They include: How can a student generate income? How does it become an income-generating undertaking? They include: Basic Entrepreneurship; Business Opportunities Identification.; Business Environment Scanning/Mapping; Basic Book-Keeping Techniques; Cash Flow Management & Budgeting; Self-Reliance and Economic Independence; Successful Business Running Requirements and Strategies; Customer Management; Business Plan; Basic Business Start-Up and Operational Framework; Effective Workplace Management; Business Funding Sources; Business Establishment Requirements; Information and Communication Technology (ICT) for Business Success; Business Sustainability and Perpetuation Planning and Techniques; Business Set Up Models/Approaches/ Start-Up; Marketing and Selling; E-Marketing; International Business; Challenges of New Enterprises and; Role of Entrepreneurial Mentors, Trade Associates and Peer Business Groups.

The trainees are taught how the concepts listed above apply to their specific training. In essence, entrepreneurship development training is intended to garnish the vocation specific training received to foster its income-generating or money-making potentials. Specific case studies on how moneys can be made are taught to trainees, followed by simulations.

Soft and Life Skills Training (SLT). Soft and Life Skills are closely interrelated and indeed intertwined. Soft Skills are the personal characteristics, personality traits, inherent social cues, and communication abilities needed for success in a workplace or job. They are characterised by how a person interacts in their relationship with other people, such as empathy, warmth, self-management, altruism and so on. Life Skills, on the other hand, are psychological abilities for positive behaviours that enable individuals to deal with the demands and the challenges of day-to-day life (Irikefe, 2017). Soft and Life Skills are the vital non-entrepreneurial and non-vocation specific skills that will enable an individual to become successful in actualising his/her enterprise or vocation. They include time management, critical thinking, personal and interpersonal relationship, problem-solving, coping with stress and communication.

Some authorities regard Soft and Life Skills as the multi-vitamins of skill acquisition training because of their importance. Irikefe (2017) zeroed on twenty-two of them, which are very relevant to skill acquisition programmes. These are the ones needed for personnel and business success. They are: Goal Setting and Goal Getting; Basic Employability Skills; Effective Self Presentation; Self-Management Skills; Leadership and Team Building; Personal and Interpersonal Skills.; Effective Relationship Management for Business Success; Basic Communication Skills; Critical Thinking for Business Success; Numeric Literacy; Financial Literacy; Problem Solving Skills; Time Management Skills; Basic Negotiations & Conflict Management Skills; Moral Rectitude and Wholesome Living; Hard work and Diligence; Coping Strategies and Life Stress Management; Peaceful Co-existence, Diversity and Tolerance; Gender Mainstreaming; Etiquette; Loyalty and; Privilege Abuse.

Post-Training Empowerment and Support (PES). The Post-Training Empowerment and Support is the last component of a holistic skill acquisition training and empowerment programme. This is because it can determine whether the programme is a success or not. It is outside the extant domain of Traditional TVET in practical terms. Whilst the traditional TVET may empower an individual with skills, where there are no follow-ups, such an individual may relapse into unwholesome activities. Or worse, use the skill that they have learned to carry out crimes due to lack of mentorship. The key components of PES include: Enterprise Operationalisation Revision; Enterprise Status Appraisals/Audits; Entrepreneurial Mentorship and Vocational Guidance; Inculcation of Vocational Best practices; Development of Synergies, Networks and Sustainable Relationships along Value Chains; Handholding Services; Financial Advisory Services and; Periodic Post Training Monitoring and Evaluations.

Teaching and Learning of Vocation Specific Trades (VSTs) /Micro, Small, and Medium Enterprises (MSMEs) Alongside and within Conventional Academic Curriculums. As part of a well-considered strategy to beneficiate/enrich the curriculums of academic institutions, it is being advocated that Technical and Vocational Education should be taught and learned alongside and within conventional academic curriculums. This will enable graduates to possess a more holistic education for employment opportunities in the future.

MATHEMATICAL REPRESENTATION AND A CONCEPTUAL FRAMEWORK FOR A NEW TVET

In truth, the relationship between the Traditional TVET and the Quadrant of Skill Acquisition can be consummated into mathematical models and equations.

Mathematical Expositions of the Nexus between TVET and the Quadrant of Skill Acquisition (QSA): Proof of Validity

There is a need to label the constituent components or members individually for the proper mathematical representation of the nexus between TVET and the Quadrant of Skill Acquisition (QSA). It is as follows:

- Holistic Skill Acquisition Training and Empowerment Programme = HOSAP.
- Vocation Specific Training = VST.
- Entrepreneurship Development Training = EDT.
- Soft and Life Skills Training = SLT.
- Post Training Empowerment and Support = PES.
- Traditional Technical, Vocational Education and Training = TVET.

In line with the QSA, HOSAP is as shown in the equation below:

HOSAP = VST + EDT + SLT + PES

Whereas, TVET = VST + EDT + SLT

TVET as a traditional human capital development concept does not emphasize PES. It is not a

matter of equals, to but that of approximation. Such that, TVET ≈ VST + EDT + SLT + PES.

This is to say that TVET is not equal to HOSAP. Such that, HOSAP ≠ TVET. If TVET is to be pigeonholed or aligned with the QSA, it can be expanded or equal to HOSAP. In essence, HOSAP is a superset, rather more encompassing or greater than the Traditional TVET. Such that HOSAP □ TVET.

Where, HOSAP > TVET or TVET < HOSAP.

The domain size relationship between a Holistic Skill Acquisition Training and Empowerment Programme (HOSAP) and the Traditional TVET as shown in Figure 3.

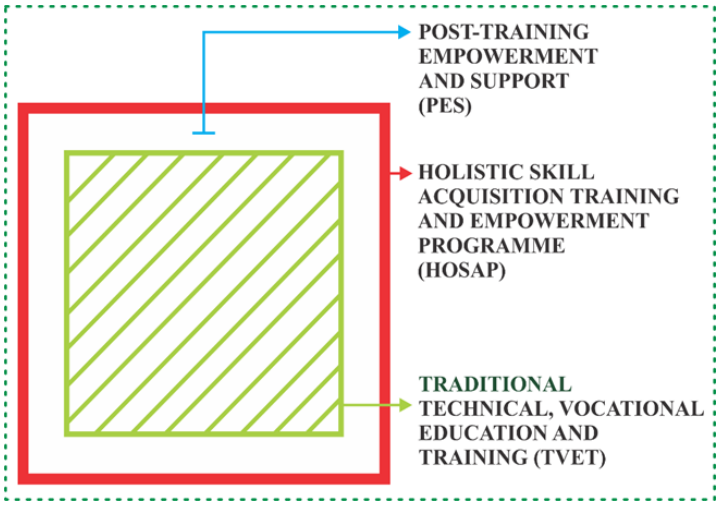

Figure 3. Conceptual Model of the Relationship between Holistic Skill Acquisition Training and Empowerment Programmes and the Traditional TVET

Expanding Beyond the Scope of the Traditional TVET: The New TVET

To come to terms with the Intra/Post-COVID-19 world's stark realities, there is the need to evolve a new TVET that should embrace the concept of Post-Training Empowerment and Support. The COVID-19 Pandemic has preponderated several volatile positions like protest, riots, and angry citizenry, and it is no longer enough to train people. Provision must be made for Post Training Empowerment and Support; trained individuals need to be followed up.

In Nigeria, the COVID-19 that gave escalation to the youths' anger on Police brutality led to a volatile protest that quickly degenerated to nationwide looting and criminalities (Uwazuruike, 2020). TVET needs to rise to the occasion to accommodate contemporary realities. To come to terms with the new normal, a New TVET needs to emerge comprising Post-Training Empowerment and Support to form a Holistic Skill Acquisition Training and Empowerment Programme. This can be mathematically represented as, TVET + PES = HOSAP. A depiction of the New TVET is shown in Figure 4.

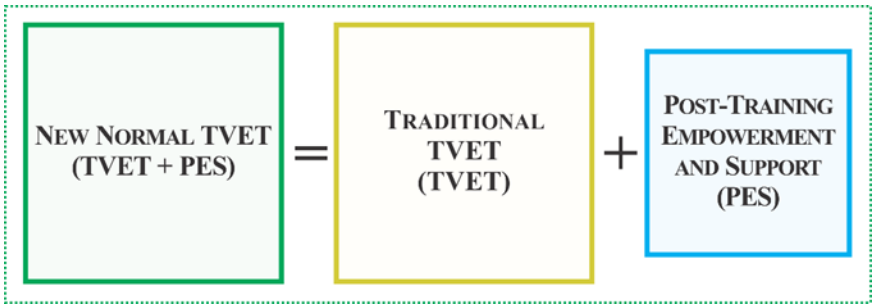

Figure 4. Conceptual Model of the Interlinkages between the New TVET, Traditional TVET and Post-Training Empowerment and Support

Graduands of TVET programmes must be followed up and tracked. This will help ascertain whether they have outrightly sold their Starter Packs after their exit from training; making progress in business but having challenges or to ascertain if the whole exercise is a "money down the drain." Here, starter packs are set set of items given to successful graduands of particular vocational training or profession to start their own enterprises or businesses. The foregoing unequivocally makes a case for properly organized Post- Training Empowerment and Support interventions inevitable. Graduates should be taught to control their anger after training.

Guiding Principles of the New Normal TVET. If the world continues to hold on to the Traditional TVET, it means that it is living in the past and and not incorporating new strategies for the future. This has become urgent in the face of burgeoning youth unemployment, pervasive poverty, increasing inequality, unending mass migration, worsening insecurity that has resulted in the destabilization of the international system. It is because of the preceding amongst others that have espoused the guiding principles below:

i. Advocates holistic impartation of vocational and skill acquisition knowledge in the sense that trainers/teachers should not concentrate on vocation specific training (VSTs) alone but must accompany VSTs with the other vital aspects of Holistic Skill Acquisition Training and Empowerment Programmes.
ii. From the start, trainers must structure their programmes to ensure their graduates can become self-reliant entrepreneurs and fit-for-purpose industry-compliant operatives/workforce.
iii. Trainers must take into consideration the post-training life of the graduates to foster economic self-independence and socio-economic sustainability.
iv. The New Normal TVET promotes the establishment of Micro, Small and Medium Enterprises (MSMEs) and VSTs to foster multiple streams of income and wealth creation, especially in this era of the high cost of living and burgeoning Youth unemployment.
v. The New Normal TVET advocates that VSTs/MSMEs must be generated, taught, and learned. This must be alongside conventional academic curriculums, irrespective

of the educational level or course, to enable graduates make a living wage after graduation.

Strategies and Measures to Facilitate the Deployment and Institutionalisation of the New Normal TVET. Before burgeoning unemployment and pervasive insecurity become so entrenched to the point of overpowering the entire system, the following strategies and measures should be adopted:

i. The various arms of government should sufficiently and deliberately plan, fund, actualise and manage TVET programmes in all academic institutions in Nigeria.
ii. All academic institutions should be provided with the requisite facilities, tools/ equipment, and consumables to facilitate the deployment and entrenchment of TVET. To this end, Tertiary Education Trust Fund (TETFUND) and Universal Basic Education Commission (UBEC) should be in the vanguard of taking up this challenge.
iii. Every class and department in all academic institutions should have dedicated focal persons to ensure TVET is actualised or institutionalised in all courses.
iv. There should be proper and continuous supervision and monitoring of the implementation of TVET programmes or TVET component of courses by Government Ministries, Departments and Agencies.
v. Competency-based TVET programmes should be introduced in all academic institutions in Nigeria.
vi. There should be regular training and re-training of all teachers in academic institutions to enable them to introduce and teach vocation specific trades/ MSMEs in their various courses they are assigned to teach.
vii. There should be internal and external supervision of the teaching and learning TVET in all academic institutions in Nigeria.
viii. For effectiveness, from the start, public-private partnership and participation in vocation specific field trainings should be part and parcel of all courses undertaken. This will facilitate better synergy between academic institutions and industry.
ix. Special incentives and allowances should be given to Teachers for the effective implementation of TVET in the courses.
x. There should be incentives to private sector entities that support the actualisation of TVET programmes in form of rebates and tax incentives.
xi. There should be active collaboration between academic institutions and industrial entities to ensure their products/graduates meet industry needs.

The bottom line is that it must be ensured and institutionalised that VSTs/MSMEs must be taught and learned alongside and within conventional academic curriculums so that students can get what to eke out living with after they exit or finish their training.

Focusing TVET as an enabler for achieving sustainable development goals (SDGs) in Nigeria. Nigeria is prepared to champion the achievement of sustainable development goals in Africa. The country has a high rate of malnutrition, poverty, hunger, poor human capital development, environmental degradation, climate change and other issues that need to be tackled by 2020- 2030 as a year of action. With a focus on achieving the 17 goals of the 2030 Agenda, the challenge of insecurity, youth unemployment and other vices will be surmounted.

VOCATIONAL TRAINING CONSOLIDATION THROUGH EFFECTIVE POST-TRAINING SUPPORT: ISSUES AT STAKE AND WAY FORWARD

All over Nigeria, there is a near frenzy in organising or executing various Skill Acquisition Training and Vocational Training Programmes. The promoters of these training programmes include local governments, states and federal government. Various corporate organisations and non-governmental organisations both local and international are also carrying out training as part of their corporate social responsibilities or social investment interventions.

Cursory Appraisals of Post Training Empowerment and Support Interventions in Nigeria

From the available evidence, post-training following ups of graduates of most Skill Acquisition Training Programmes in Nigeria are generally very poor (Okolocha *et al*., 2020). Most promoters of Skill Acquisition Training and Empowerment Programmes see the conclusion of training programmes as the end of their interventions or obligations.

The reasons that can be attributed to these amongst others include: Lackadaisical attitude to post-training matters; Lack of genuine interest of training promoters in post-training follow-up; Wrongful perception by training promoters as needless use of resources; Payment of lip-service to post training empowerment and support; Crass ignorance of the significance of post-training support as a means of measuring the overall success of the Training progress; Over politicisation of Skill Acquisition Training Programmes; Sponsorship or nomination of political supporters, political party members, loyalists, and cronies to attend Skill Acquisition Training Programmes to compensate them for securing their continued loyalty.

Inimical Dimensions or Consequences of Lack of Properly Structured Post-Training Empowerment and Support

Unfortunately, most Skill Acquisition Training and Empowerment Programmes are not followed up with properly structured Post-Training Empowerment and Support arrangements. These have underlined inimical or negative consequences. Amongst others are:

- Not using money appropriately.
- Wrongful application of public and private funds.
- Lack of achievements of the intended goals and objectives of the training

programmes.

- Needless wastage and application of public and private funds.
- Lack of the desired impact of the training on the beneficiaries, and the society at large.
- Wrong sense of empowerment of the beneficiaries.
- Seeing Skill Acquisition Training Programmes as not important.

Strategies for Consolidating TVET Programmes and the Suggested Ways Forward

In a situation where there is widespread unemployment, especially amongst the youths, there is the need for promoters or sponsors of Skill Acquisition Programmes, whether public or private, to structure properly organised Post-Training Empowerment and Support components into their project plans. This will go a long way in ensuring the effectiveness and measurability of the success of any Skill Acquisition Training Project.

To foster the consolidation of New TVET programmes, the following strategies are suggested:

- It must be ensured by both public and private promoters or sponsors of Skill Acquisition Training and Empowerment Programmes that the Post Training Empowerment and Support aspect must be taken into consideration.
- There is the need for sponsors and promoters of Skill Acquisition Training and Empowerment Programmes to see Post Training Empowerment and Support as part and parcel of the Project Plan.
- Sponsors and promoters of skill acquisition training and empowerment programmes should not pay lip service to implement any agreed post training empowerment and support plan.
- There must be an adequately Structured Post Training and Empowerment Support Plan that should accompany any TVET Programme, and it should be adequately and genuinely monitored and implemented.
- Persons, especially trainers or their personnel who have been appropriately trained, should carry out Post-Training Support Interventions. Such entrepreneurial mentors should at intervals be monitored by the representatives of the sponsors or promoters.

PROACTIVE INCULCATION OF TVET-BASED COMPETENCIES WITHIN AND ALONGSIDE CONVENTIONAL ACADEMIC CURRICULUMS

It is very much in the public domain the high rate of unemployment amongst graduates of Nigerian academic institutions can be largely attributed to lack of functional education (Adebayo, 2013; Lawal, 2013; Ogbunaya & Udoudo, 2015; Olayiwola & Oluwafemi, 2016). It appears they are being trained as job seekers. From the study of curriculums of academic institutions in Nigeria in the last 12 years, it was observed that if vocation specific trades (VSTs) or Micro, Small and Medium Enterprise (MSMEs) which the students/graduates can

use to generate income after graduation are attached to their respective curriculums, things will be better off for them, after graduation.

As things now stand in Nigeria, there is the need for all educational authorities to make it compulsory for academic institutions to promote the generation, teaching and learning of VSTs or MSMEs in all their academic institutions. This can promote post-graduation job creation and reduction of insecurity in the country. The level of insecurity in Nigeria will be greatly reduced if the citizenry, primarily the youths, are meaningfully engaged, one way or the other.

Underlying Frameworks for the Beneficiation/Enhancement of Conventional Curriculums to Produce Vocational Specific Enterprises that will Culminate in Post-Graduation Jobs or/and Income Generating Ventures

The end goal here is for graduates of academic institutions to have vocation specific enterprises they can depend on after they exit their training. This will go a long way in reducing graduate unemployment. The two areas addressed are:

- Teaching and Learning of Vocation Specific Trades (VSTs)/Micro, Small, and Medium Enterprises (MSMEs) Alongside and within conventional academic curriculums.
- Design and generation of Vocation Specific Trades (VSTs)/Micro, Small and Medium Enterprises out of conventional academic curriculums.

Teaching/Learning of Vocation Specific Trades (VSTS)/Micro, Small and Medium Enterprises (MSMEs) Alongside and within Conventional Academic Curriculums. For over a decade, scholars alike have continuously studied the curriculums of all levels of academic institutions in Nigeria. The common missing link is the general lack of the teaching and learning of VSTs. Deliberate efforts must be made to ensure that VSTs or MSMEs related to or connected with the course being studied are taught. This must be done from the beginning as compulsory courses at all levels. This is to ensure that the mastery and internalisation of the VST or MSME being studied.

The teaching and learning of VST must be accompanied by the impartation of practical entrepreneurship development training, applicable soft and life skill training, and post-training advisory services. Also, introducing several VSTs to conventional academic curriculums will significantly reduce the presence of unemployed graduates in the country. Hence, the narrative of graduates going to learn vocational skills after graduation from universities will be abated. A depiction of VSTs interlinking with conventional academic curriculums is depicted in Figure 5.

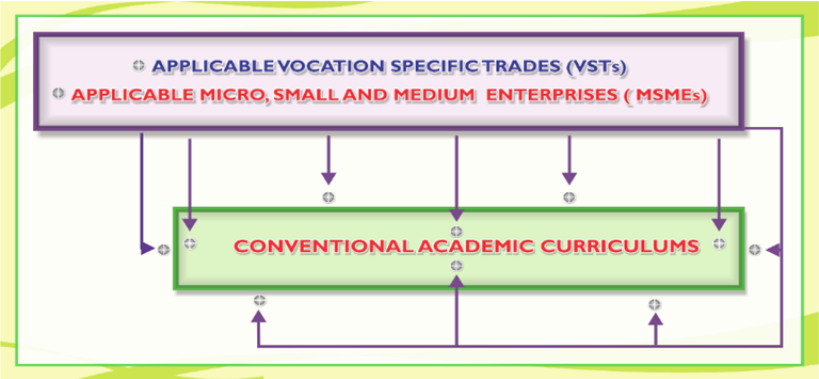

Figure 5. Conceptual Model Depicting Vocation Specific Trades & Micro, Small and Medium Enterprises Surrounding and Infiltrating Conventional Academic Curriculums

Generation of Vocation Specific Trades (VSTs) and Micro, Small and Medium Enterprises (MSMEs) by Lecturers and Students of Academic Departments. To embrace and ultimately institutionalize the generation of VSTs and MSMEs out of conventional curriculums, lecturers and students alike should be tasked with this exercise. To promote this:

- Lecturers should be tasked with the generation of some numbers of VSTs or MSMEs every session and this should be tied to their promotion as lecturers by the school authorities.
- Tasking students either individually or working in groups to generate VSTs or MSMEs as part of their semester courses every year.
- Certification and holding of mandatory annual refresher courses on the generation of VSTs or MSMEs, entrepreneurship development training and soft & life skills training for lecturers.

If the above is carefully followed and diligently implemented, it can enrich and change the curricular and teaching methodologies of academic institutions and the fortunes of students/ graduates for good. Table 1 shows some examples of deliverables from the generation of VSTs out of conventional academic curriculums:

Table 1. Examples of Vocation Specific Trades (VSTs) and Micro, Small and Medium Enterprises (MSMEs) that can be generated out of conventional academic curriculums.

S/N	Department in Academic Institution	Product(s) Derivable	Services that can be Provided
1.	Chemical Engineering	• Insecticides • Liquid Detergent • Car Polish • Shoe Polish • Pesticides, Herbicides & Disinfectants • After Shaves • Hair Dyes • Hair Creams • Shampoos • Hygrometers for checking adulterated	
2.	Mechanical Engineering		Establishments and running of "Mechanic Workshops" for: • Motor Vehicles • Rickshaws • Motorcycles • Generators • Speed Boats and other Watercraft
3.	Forestry Management	• Decorative Carving • Assorted Tourists Souvenirs • Customized House Doors • Writing Desks • Dining Tables • Cupboard • Shelves	
4.	Nuclear Science/ Nuclear Physics		• Servicing of Medical X-ray machines • Carrying out Non-Destructive Testing (NDT) of Welded Metals and Joints

Specific Positive Deliverables Derivable from the Generation, Teaching and Learning of Vocation Specific Trade (VSTs)/ Micro, Small and Medium Enterprises (MSME) Alongside and within Conventional Academic Curriculum. Based on the Conceptual Model proposed here, several specific positive deliverables can emerge from generating, teaching, and learning VSTs and MSMEs alongside conventional curriculums. These include but not limited to:

- Prospective Establishers and Operators of Profitable MSMEs.
- Fit-For-Purpose, Industry Compliant Employees/Workforce

- Job-Creating Business Persons.
- Designers and Producers of Market-Viable Products and Services.
- Economically Self-reliant & Independent Entrepreneurs.
- Assorted Technical Services Specialists & Craftsmen.
- Post-Graduation Service Providers.

The above is captured in the Conceptual Framework shown in Figure 6.

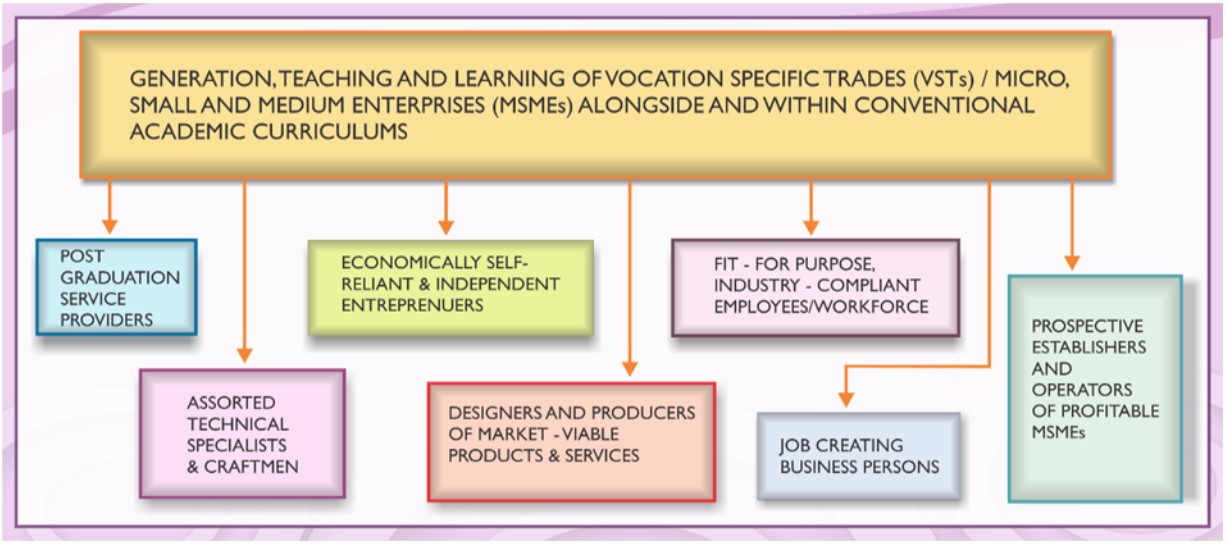

Figure 6. Conceptual model Depicting the Positive Deliverables of the Generation, Teaching and Learning of VSTs and MSMEs Alongside and Within Conventional Academic Curriculums.

CONCLUSION AND RECOMMENDATIONS

While it has been established that TVET can be used to impart youths with economic skills for better living, in a contemporary era when volatile activities can lead to criminalities, it is seldom enough. Furthermore, studies have shown that if individuals are given the Traditional TVET, there is the tendency for them to relapse into unwholesome activities or worse, use the skills they have learnt to carry out negative trades and crimes. A New TVET is developed Hitherto the foregoing—one that matches contemporary happening with added Post-Training Empowerment and Support component.

For effectiveness, the TVET implementation strategies should entail vocation-specific training, entrepreneurship development training, applicable soft & life skill training, training in the usage & application of vocation-specific starter packs, the actual provision of starter packs and post-training support. The paper also advocates the teaching and learning of vocation specific trades (VSTs) or Micro, Small and Medium enterprises (MSMEs) alongside and within conventional academic curriculums so that graduates can get what to eke out living with after graduation. Even though the study used Nigeria as a case study, the international community can utilise the principles therein.

It is recommended that the various conceptual models and actualisation frameworks be adopted and incorporated into various skill acquisition training and empowerment programmes being carried out. Deliberate efforts should equally be made to take Post-Training Empowerment and Support very seriously to ensure the sustainability and effectiveness of training programmes. Finally, governments at all levels, corporate organisations and well-meaning non-governmental organisations should be encouraged to embark on extensive skill acquisition training programmes. This should be accompanied by adequate vocation-specific starter pack provisions and properly supervised Post-Training Empowerment and Support interventions.

REFERENCES

Adebayo, A. (2013). Youths Unemployment and Crime in Nigeria: A Nexus and Implications for National Development. *International Journal of Sociology and Anthropology,5*(9), 350-357. doi:10.5897/ijsa2013.0452

Adebimpe, O. I., Adetunji, A. T., Nwachukwu, C., & Hieu, V. M. (2021). Covid 19 Pandemic Challenges: The Youth Unemployment in Nigeria. *Journal of Contemporary Issues in Business and Government, 27*(1), 2004-2012.

Adegbami, A. (2013). Insecurity: A Threat to Human Existence and Economic Development in Nigeria. *Public Policy and Administration Research, 3*(6), 15-28.

Aminu, A. (2019). Characterising Graduate Unemployment in Nigeria as Education-job Mismatch Problem. *African Journal of Economic Review, 7*(2), 113-130.

Babalobi, B. (2019, December 17). Nigeria: Why graduates are unemployed and unemployable. Retrieved March 28, 2021, from https://www.vanguardngr.com/2019/12/nigeria-why-graduates-are-unemployed-and-unemployable/

Duruji, M., & Dibia, O. (2017). Crude Oil, Resource Curse and the Splintering of Nigeria into National Pieces. *Covenant Journal of Business & Social Sciences (CJBSS), 8*(2), 60-75.

Ekeruche, M. A. (2019, February 08). Free to read: Nigerians are educated and jobless. Retrieved March 29, 2021, from https://www.stearsng.com/article/nigerians-are-educated-and-jobless

Ewetan, O. O., & Urhie, E. (2014). Insecurity and Socio-Economic Development in Nigeria. *Journal of Sustainable Development Studies, 5*(1), 40-63.

Irikefe, B. O. (2020). *Handbook of Skill Acquisition Training and Empowerment Programmes* (2nd ed.). Abuja: International Centre for Sustainable Development, Nigeria.

Lawal, A. W. (2013). Technical and Vocational Education, a Tool for National Development in Nigeria. *Mediterranean Journal of Social Sciences, 4*(1), 85-89. doi:10.5901/mjss.2013.v4n8p85

Lochner, L., & Moretti, E. (2004). The Effect of Education on Crime: Evidence from Prison Inmates, Arrests, and Self-Reports. *American Economic Review, 94*(1), 155-189. doi:10.1257/000282804322970751

Nigerian Educational Research and Development Council. (2004). *National Policy on Education* (4th ed.). Lagos: NERDC Press.

Ochi, I. B., & Mark, K. C. (2021). Effect of the ENDSARS Protest on the Nigerian Economy. *Global Journal of Arts, Humanities and Social Sciences, 9*(3), 1-15.

Ogbunaya, T. C., & Udoudo, E. S. (2015). Repositioning Technical and Vocational Education and Training (TVET) for Youths Employment and National Security in Nigeria. *Journal of Education and Practice, 6*(32), 141-147.

Ojewale, O. (2020, October 29). Youth protests for police reform in Nigeria: What lies ahead for #EndSARS. Retrieved March 30, 2021, from https://www.brookings.edu/blog/africa-in-focus/2020/10/29/youth-protests-for-police-reform-in-nigeria-what-lies-ahead-for-endsars/

Okolocha, C. B., John-Akamelu, C. R., & Muogbo, U. S. (2020). Effect of Skill Acquisition on Youth Employability in Nigeria. *International Journal of Research in Finance and Management, 3*(1), 33-37.

Okoro, P. E. (2018). Strategies for Curbing Insecurity in Nigeria through Business Education Programme. *International Journal of Innovative Education Research, 6*(3), 40-46.

Olayiwola, O.M., & Oluwafemi, A.M. (2016). Problems and Strategies for Revamping Technical and Vocational Education in Nigeria. *Journal for Studies in Management and Planning, 2*, 89-97.

Oluduro, O., & Oluduro, O. F. (2012). Nigeria: In Search of Sustainable Peace in the Niger Delta through the Amnesty Programme. *Journal of Sustainable Development, 5*(7). doi:10.5539/jsd.v5n7p48

Oshita, O. O., Alumona, I. M., & Onuoha, F. C. (2019). *Internal Security Management in Nigeria: Perspectives, Challenges and Lessons*. Singapore: Springer Singapore. doi:10.1007/978-981-13-8215-4

Press, B., & Carothers, T. (2020, December 21). Worldwide Protests in 2020: A Year in Review. Retrieved April 5, 2021, from https://carnegieendowment.org/2020/12/21/worldwide-protests-in-2020-year-in-review-pub-83445

The Criminalization Of The #endsars# Protest In Benin Metropolis, Southern Nigeria. (2020). *Journal of Xidian University, 14*(12). doi:10.37896/jxu14.12/041

UNESCO-UNEVOC. (2006). *Participation in formal technical and vocational education and training programmes worldwide: An initial statistical study*. Bonn: UNESCO-UNEVOC International Centre for Technical and Vocational Education and Training. Retrieved March 29, 2021, from http://unesdoc.unesco.org/images/0014/001496/149652e.pdf

Uranta, D., & Nlerum, F. N. (2017). Effectiveness of the Skills Acquisition Programme of SPDC and NDDC. *IOSR Journal of Humanities and Social Science (IOSR-JHSS), 22* (4), 1-6. doi:10.9790/0837-2204010106

Uwazuruike, A. (2020). #EndSARS: The Movement Against Police Brutality in Nigeria. *Harvard Human Rights Journal, 33*. Retrieved April 2, 2021, from https://harvardhrj.com/2020/11/endsars-the-movement-against-police-brutality-in-nigeria/#_ftn1

TECHNICAL AND VOCATIONAL EDUCATION AND TRAINING (TVET) IN SAUDI ARABIA AS STRATEGIC KEY IN THE OVERALL INDUSTRIAL DEVELOPMENT PROCESSES

Mohamed Mustafa Elnour Ahmed

ABSTRACT

Because of the increasing need to qualify the Saudi youth in both the technical and industrial areas, professional skills are needed for industrial development of the country. This study highlights the importance of Technical and Vocational Education and Training (TVET), TVET strategy and key policy, TVET's curriculum design and delivery to meet the labor market in KSA, to counter the challenges facing for TVET implementation and the role of TVTC in the TVET's reform in Kingdom of Saudi Arabia. Literature reviewed indicated that the Government of Saudi Arabia recognizes the strengthening of TVET as a mean of developing the technical skills in the human resource base which the nation needs urgently as a key strategy for achieving its industrial vision. It was noted that, to achieve this objective, a policy framework and direction is required as well as a radical shift in the design and delivery of the TVET curriculum at all levels. The study suggested that Competency Based Training (CBT) should be included in the TVET curriculum design and delivery at all levels of TVET institutions to help promote skill and industrial development vision. The study concluded that, the Human resources with sufficient scientific and technological and technical skills can create wealth and help the country to attain industrial development by providing vocational and technical training for Saudi men and women to fit for National Occupational Skills Standard (NOSS).

Keywords: KSA National Transformation program 2020, KSA Vision 2030, National Occupational Skills Standard (NOSS).

INTRODUCTION

Technical and Vocational Education Training is a fundamental element in the development equation because it allows individuals and societies to unlock their potentials, expand their horizons and adapt to the changes in the dynamic world, (Afeti,20003). Basically, the purpose of technical and vocational education is to equip young men and women with the technical and professional skills needed for development of the country by providing the vocational and technical training based on international occupational standard to meet the need of the labor market. The government of Saudi Arabia has, in recent times, given renewed recognition to the TVET and recognized the value of technical training as a profession, and they express this recognition via higher pay and bonuses for outstanding achievements, (Towards a history of VET, 2002). In line with this realization, one of the basic philosophy and orientation of Saudi vision 2030 plan is to reform all Technical/ Vocational Education system to make it more responsive to the national goals and aspirations as well as local and global demands,(Standard VI –Instructional Personnel, 2011). Indeed, an improved TVET system will promote manufacturing, construction technology, Argo-based industry and commerce. To achieve the mentioned objective, requires a policy framework and direction as well as a radical shift in the design and delivery of the TVET curriculum at all levels especially at the industrial technology level. It is in this regard that Competency Based Training (CBT) has been emphasized in recent TVET education.

This change of focus of training is based on the fact that it is the trained technical manpower in the advanced countries which has served as catalyst for industries in their economies. Since 2004, Japan International Cooperation Agency (JICA) has set up a Technical and Vocational Education and Training Support (TVETS) project which facilitated the passage of the TVTC law, developed detailed implementation plans for TVTC, and has been piloting CBT in technical/vocational training institutions and Polytechnics, (Afeti, 2003).

LITERATURE REVIEW

The Establishment of the Technical and Vocational Training Corporation (TVTC) and its Development in KSA

The beginning of training goes back to early time in the Kingdom when three governmental agencies were involved in the performance of the task; Ministry of Education used to have Industrial, Agricultural and Trade high schools, Ministry of Labor and Social Affairs had the vocational training and Ministry of Municipality and Rural Affairs had Institutes of Assistants, (Standard VI –Instructional Personnel, 2011). As the State of Saudi Arabia is interested in the preparation of manpower in the technical and vocational fields and because of the increasing need to qualify the Saudi youth in the technical and industrial areas, it was found wise to locate all the responsibilities of technical and vocational training under one umbrella, (TVET Country Profiles, 2019). Therefore, the Royal Decree No. 30 of 10/8/1400 was issued to establish the Technical and Vocational Training Corporation in order to unify all technical and vocational training centers under the Corporation. The decision of the Council of Ministers No.3108 / M B

dated 4/3/1426 was issued to emerge the vocational training sector for Girls into the Technical and Vocational Training Corporation (TVTC) to complete the vision of locating all the vocational and training areas under one umbrella. In an extension of the patronage and interest of the leadership, May Allah Honor them, to the technical and vocational training, the Royal Decree approved the Council of Ministers Decisions No. 268 of 14/08/1428, to reorganize the Technical and Vocational Training Corporation, (Standard VI –Instructional Personnel, 2011).

STATISTICS

Table 1. Demographic Indicator and Statistics

Category	Indicator	Statistics
Demographic	Total population, (World Bank. MENA economic monitor ,2018)	32,938,213 (2017)
	Population growth, (World Bank. MENA economic monitor ,2018)	2.0% (2017)
	Median age of population in years, (World Bank. World Development Indicators, 2017)	27
	Population aged 15-24 years, (World Bank. World Development Indicators, 2017)	4,889,253

Table 2. Type of technical colleges and institutions in KSA (TVET Country Profiles, 2019)

Type of institution	Education level	Ministry responsible	Number of institutions
Colleges of Technology (male)	Upper secondary	Technical and Vocational Training Corporation	52
Colleges of Technology (female)	Upper secondary	Technical and Vocational Training Corporation	36
Strategic Partnership Institutes	Upper secondary	Technical and Vocational Training Corporation	24
Industrial Secondary Institutes	Lower Secondary	Technical and Vocational Training Corporation	64

Table 3. Other useful statistics related to TVET and skills development, (TVET Country Profiles, 2019)

Indicator	Enrolment Statistics
Colleges of Technology- Female Diploma	30,963
Colleges of Technology - Male Diploma	123,461
Strategic Partnership Institutes Diploma	9,594

QUALITY ASSURANCE

Currently, the TVTC ensures the quality of TVET provision at its institutes in accordance with the standards established under the TVTC mandate. However, following the promulgation of the National Qualifications Framework, the quality assurance will be linked to the provisions established therein. The NQF will also furnish the rules, regulations and guidelines to accredit and certify the academic and technical programs, (Standard VI –Instructional Personnel, 2011).

METHODOLOGY

This study used literature review and TVET historical background as the main research method to retrieve data for the study. Therefore, the data gathered for discussion were obtained mainly from many resources, which involved the use of information from conference proceedings, books, TVTC reports, UNESCO-UNEVOC reports, Labor Department data, journals, and internet, about issues raised and concepts discussed in the text. In addition, various reports and documents relating to Technical and Vocational Training in general and KSA in particular, were used for the study. The analysis used for the study is basically qualitative and descriptive in nature.

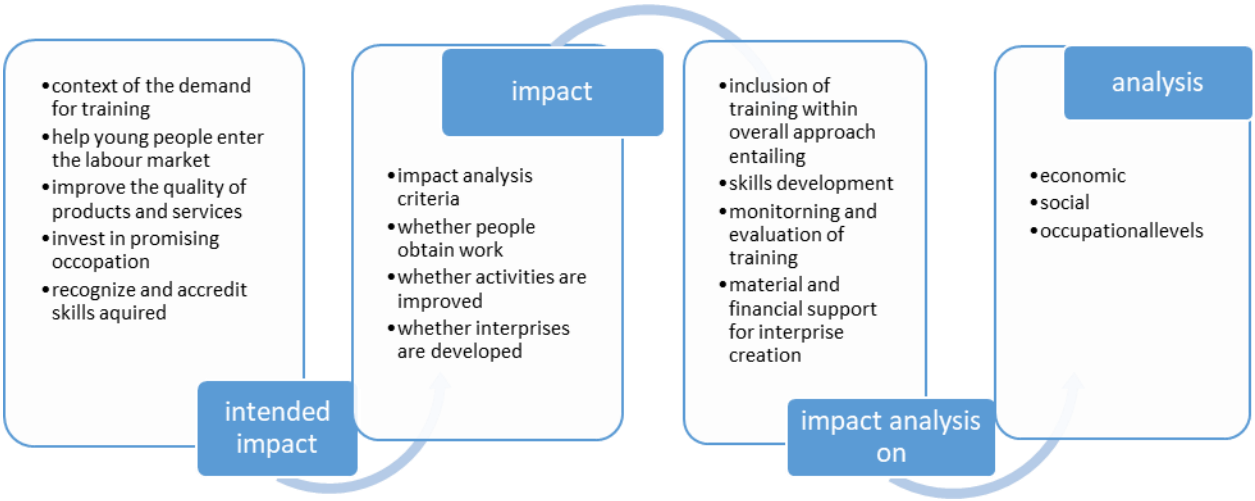

Figure 1. Training Processes.

STATEMENT OF PROBLEM

More than 60% of Saudi University students are focused on Human and Social Sciences and Islamic Studies, leaving them less equipped for the technical labor market when they graduate. Higher education, and technical and vocational training are still so far apart from the requirements of the technical labor market and specifically in the private sector. Official data shows that the proportion of those who enrolled in Saudi Universities from high school is the highest in the world, 78% (more than 383,000 students), compared to 56% in countries of the Organization for Economic Cooperation and Development (OECD) and a little less than 30% in Turkey. But only 9% of those who have finished high school enrolled in colleges offering technical or vocational training, compared to 41% in the OECD and about 37% in Turkey. The global average for enrollment in technical and vocational colleges is roughly 40%.

The problem is that more than 63% of Saudi University students who are focused on studying Human and Social Sciences, and Islamic Studies, are not ready for the technical labor market and are generally useless for the industrial sector, as evident by the number of unemployed holders of a bachelor's degree at 46.2% of the total unemployed in the Kingdom. The fact is that there is an incompatibility between the output of higher education and the technical labor market. Professional and technical colleges in the Kingdom need to significantly improve the quality of education and type of specialization, and generally need to develop a new educational curriculum and training methods to align with the needs of the technical labor market.

PURPOSE OF THE STUDY

The purposes of this study are to highlight:

1. The importance of Technical and Vocational Training
2. TVET strategy and key policy
3. TVET curriculum design and delivery to meet the labor market in KSA
4. Challenges facing TVET implementation and the role of TVTC in the TVET reform in KSA

DISCUSSION

Importance of Technical and Vocational Training

Hands on skills are important for growth and productivity but are also at the center of a fair and inclusive globalization and broad access to opportunities is vital. The World Commission on the Social Dimension of industrial development noted that all countries that have benefited from globalization have invested significantly in their education and training systems. In this ever changing fast paced global economy, technology is becoming more and more important. In order to implement this objective, the TVTC put strategic objectives to determine the importance of TVET:

Strategic Objectives of Technical and Vocational Training Corporation (TVTC)

- Accommodating the largest number of applicants who are interested to join the technical and vocational training in order to participate in the process of realizing the required sustainable development.
- Qualifying and developing the national workforce in the technical and vocational fields, according to the labor market needs in terms of quantity and quality.
- Delivering a quality and efficiency–based training programs that qualifies the trainee to find an appropriate job in the labor market.
- Having the ability to adapt and deal with the challenges and changes successfully, based on research and applied studies.
- Building strategic partnerships with business sectors, in order to implement technical and vocational programs.
- Making the community aware of the importance of working in technical and vocational fields, as well as providing the appropriate environment for life long training.
- Creating a safe and motivating environment for working and training at TVET institutions.
- Encouraging investment in private technical and vocational training.
- Strengthening and integrating relationships with national educational and training institutions. Expanding in the areas of advanced training that support the national plans, as well as participating and developing the process of technology transfer.

TVET Strategy and Key Policy

Technical and vocational education and training (TVET) in Saudi Arabia aims to attract more students and provide them with the necessary skills needed to support the country's sustainable development. Initiatives include fostering cooperation with the private sector and developing the capacity to adapt and deal with changes based on applied research. The following key documents help guide the development of TVET in Saudi Arabia.

Table 4. Vision 2030

Name of document	Vision 2030
Date entered into force	2015
Website link	http://t1p.de/ha3y
Key points and objectives: Vision 2030 sets out a broader concept for Saudi Arabia's future development, including the adaption of skills set to meet the demands of the market It emphasizes the training of youth and supports the participation of Saudi women in the labor market through skills development, in cooperation with the private sector and community organizations.	

Table 5. National Transformation program 2020

Name of document	National Transformation program 2020
Date entered into force	2015
Website link	http://t1p.de/hgov
Key points and objectives: The National Transformation Program 2020 operationalizes Vision 2030 and establishes targets for the ministries and other associated bodies. *With regards to education, the program calls on those responsible to:* *- Provide education services to all students at all levels;* *- Improve recruitment, training and the development of teachers;* *- Improve the learning environment to stimulate creativity and innovation;* *- Improve curricula and teaching methods;* *- Improve students' values and core skills;* *- Enhance the education system's ability to meet the needs of the labor market;* *- Develop the education sector's financing system;* *- Develop partnerships with the private sector.*	

Table 6. Technical and Vocational Training (TVTC) Strategy

Name of document	Technical and Vocational Training (TVTC) Strategy
Date entered into force	2008
Website link	http://t1p.de/7tnw
Key points and objectives: Vision 2030 sets out a broader concept for Saudi Arabia's future development, including the adaption of skills set to meet the demands of the market. It emphasizes the training of youth and supports the participation of Saudi women in the labor market through skills development, in cooperation with the private sector and community organizations.	

Education transformation projects related to the national development goals of the Saudi Arabia Vision 2030 focus on:

- The need to develop trainers, technicians and specialists;
- The need to design and implement quality training programs; and
- Introducing and developing advanced training initiatives.

TVTC Curriculum Design and Development to meet the labor market in KSA

The main goal of TVET curriculum development is to provide guidance to the TVET curriculum developers for developing job-oriented and effective curriculum. The development of CBT curricula design for curriculum developers. By using the commonly agreed format of TVET curriculum development, the implementation of the training will be simpler, easy to understand and more effective. This will further help in improving the training delivery and implementation of the Technical and Vocational Training (TVET) programs.

The importance TVET curriculum development:

- Standardizing the structure and format of TVET curriculum for uniformity and to improve the quality of curriculum
- Establishing a logical set of principles and guidelines aimed at facilitating the curriculum design of TVET courses.
- Providing guidance and a basis for training providers/institutes curriculum development committees in developing CBT.

CBT education is more of career-oriented and a more practical focus than traditional method of teaching which depends mainly on Learning Outcome (LO).

Competency-Based Training has been defined in different ways by different authors. Some people use the terms Competency Based Education (CBE), and Competency Based Learning (CBL) to promote their approach to designing their curricula and to describe education that focuses on the acquisition of the competencies necessary to be able to perform professional tasks.

There is growing support for CBT because it enables people to acquire skills and competencies that meet the needs of industry and society (Norton, 1987). Foyster (1990) argues that using the traditional, time-based model for training Learning Outcome (LO) is inefficient compared with CBT. The good thing about CBT is that when it is combined and integrated with traditional or old learning methods, students are able to learn what their future employers expect from them. Many countries such as Britain, USA, New Zealand, and Australia, have adopted and used CBT as an effective education and training system which can effectively respond to the needs of people entering the workforce for the first time, re-entering the workforce or upgrading their skills for an existing job (JICA, 2001).

Challenges facing TVET implementation and the role of TVTC in the TVET reform:

1. **Gender equality in TVET programs:** Equality of access to TVET for females has been a challenge, and continuous efforts are underway to promote their participation in TVET programs.
2. **Increase enrolment:** TVTC needs to further encourage Saudi nationals to participate in TVET programs by making TVET pathways more attractive. The provision of new TVET programs that develop industry and labor market responsive skills at the secondary education level could foster the choice of pursuing the TVET pathways at higher levels as well. Such programs ought to focus upon key industries of the Saudi economy, both current and emerging. Furthermore, investments in the Industrial Secondary Schools are planned to establish diploma courses for TVET graduates.
3. **Improve training environment and professional guidance:** TVET organizations and workplaces need to be modernized so that they can offer more valuable and

relevant training and professional exposure to the students. This would not only improve the quality of TVT and its learning outcomes, but also foster greater innovation.

4. **Incorporate ICT in TVT:** Capacity of TVET trainers and institutions needs to be developed to support the continued integration of ICTs in TVET Part of the ongoing work focuses on improving the e-training systems in TVETC colleges and institutes. This includes the use of distance learning, blended learning and self-training (which is training through MOOC`s followed by an official exam) programs offered by the institutions under the TVTC.
5. **Developing relevant curricula:** Forecasting current and emerging skills demands is a challenge. However, currently efforts are underway to ensure that the curricula developed meets the needs of the current and future labor markets. There is a lot of emphasis on making sure that the curricula take into account the new technologies. To further enhance the consistency of the training programs being offered with the industry's needs, TVTC is collaborating with a variety of industrial partners. These include training academies with leading Information and Communication Technology companies such as Cisco (56 academies), Oracle (18 academies), Microsoft (70 academies), Huawei (2 academies), SAP (20 academies) and Adobe (18 academies).

RECOMMENDATIONS

1. TVTC needs to improve basic competence in three subjects: English, mathematics and ICT. It should also include lifelong learning skills, with a special emphasis on personal and interpersonal skills as well as values and ethics. Some examples of these skills and values are the ability to listen and express oneself orally and in writing, the ability to learn as an individual and as part of a team, the ability to meet deadlines, reliability, integrity, responsibility and accountability as well as a positive and committed attitude towards work in general and towards one's place of employment in particular.
2. Targeted resources need to be invested in TVET programs with an emphasis on promoting affirmative action.
3. A TVTC needs to set up to forecast HRD needs in KSA. Such a council should function as a legally defined statutory body, with structured methods and an adequate budget for ongoing HRD needs analysis and forecasting. This study also recommends establishing a mechanism for regular updating of TVET curricula.
4. The quality of the Instructors in TVET is the most important component in producing skilled and educated workers.
5. Competency Based Training (CBT) should be included in the TVET curriculum design and delivery at all levels of TVET institutions to help promote skill vision and industrial development.

CONCLUSION

Professional and technical colleges in the Kingdom need to significantly improve the type of specialization, and generally need to develop a new educational curriculum and training methods built on Competency Based Training (CBT), to align with the needs of the labor market. The Saudi industrial sector is in urgent need of technical and professional disciplines, and this would make the Saudi economy shift from excessive dependence on expatriate labor to rely on national employment.

Until this happens, Saudi Arabia must inject technical material and intensive professional training in general education. Attention must be given to ensure the empowerment of the public education system to provide students with the technical skills needed by the labor market, especially since 13.4 percent of the total employees in local private sector companies are Saudis, according to Labor Department data.

Eventually, to assure the quality of Vocational Training programs output all TVET providers, including private institutions, need to be accredited by the Technical and Vocational Training Corporation.

ACKNOWLEDGEMENTS

First of all, my thanks to Allah for giving me health and luck to complete this study. I gratefully acknowledge the Royal Commission for Jubail, and Jubail Technical Institute, for their constant support and encouragement to carry out this research.

LIST OF ABBREVIATIONS

TVET: Technical and Vocational Education Training

TVTC: Technical Vocational Training Corporation

ICT: Information and Communications Technology

CBT: Competency Based Training

LO: Learning Outcome

TVETS: Technical and Vocational Education and Training Support

JICA: Japan International Cooperation Agency

KSA: Kingdom of Saudi Arabia

OECD: Organization for Economic Cooperation and Development

NOSS: National Occupational Skills Standard

REFERENCES

Afeti, G., Baffour-Awuah, D. and Budu-Smith J. (2003) Baseline Survey for the Introduction of Competency - Based Training in Polytechnics, National Council for Tertiary Education (NCTE)/ Japan Internal Cooperation Agency (JICA).

Foyster , J. (1990).Getting to Grips with Competency-Based Training and Assessment.

Norton, W. (1987). Humans, Land, And Landscape: A Proposal For Cultural Geography.

Japan Internal Cooperation Agency annual report, 2001.

Standard VI –Instructional Personnel C. Instructor Orientation and Training Exhibit12- New Trainer Orientation Program Guide Compiled by the Technical and Vocational Training Corporation, Saudi Arabia, 2011.

Towards a history of vocational education and training (VET) in Europe in comparative perspective Proceedings of the first international conference October 2002, Florence Volume I. The rise of national VET systems in a comparative perspective.

UNESCO-UNEVOC International Centre for Technical and Vocational Education and Training UN Campus TVET Country Profiles | Saudi Arabia February 2019.

World Bank. World Development Indicators, 2017. https://data.worldbank.org/country/saudi-arabia

World Bank. MENA economic monitor.

http://documents.worldbank.org/curated/en/295771523636086106/pdf/125262-MEM-April2018-Saudi-Arabia-EN.pdf

RE-ORIENTATION OF NCE-TVET CURRICULUM WITH RESOURCE-BASED STRATEGY TO ACHIEVE SUSTAINABLE DEVELOPMENT GOALS

Abdulrazak Umar Mu'azu

ABSTRACT

In the last few years, the National Commission for Colleges of Education (NCCE), the body responsible for coordinating the affairs of Nigerian Certificate in Education (NCE) awarding institutions, has been involved in a number of activities (including conferences, workshops, critiquing sessions, etc.) to address the discrepancy between teacher certified qualifications and the quality of their on-the-job performance. The mandate of the teacher training programme at NCE level, which is recognized minimum teaching qualification in Nigeria, is to produce quality teachers for the Basic Education level. The Basic Education sub-sector encompasses five categories which the Vocational and Technical Education programme is one category. This paper attempt to look at the NCE Vocational and Technical Education Minimum standard (curriculum), with aim to highlight areas of deficiency in terms of the mandate of the NCCE curriculum reform considering the 2030 agenda for Sustainable Development goals (SDG) especially the Goal No. 4 that emphasizes on the quality education. The entire reform is based on changing the teaching-learning methodology to a resourced-based learner centered approach. This paper discusses some of the resource-based strategies; including use of educational technology, online learning resources, learning theories for teaching methods as re-orientation to the NCE curriculum for TVET educators to meet the needs for quality education for the achievement of sustainable goals.

INTRODUCTION

The growing concern about sustainable development has led present day policy makers, administrators, and educators to call for a more holistic approach in integrating sustainable development in the curricula or allowing the rise of new study or research areas or skills training areas within the educational system in response to the new economy or SD-oriented technologies in the workplace. According to Norman and Mayer (2010), educational, social, and economic sustainability are pillars of sustainable development. These have generated serious attention to the approaches in using natural resources, minimizing waste, adopting non-hazardous workplace, practices, environmental auditing system, sustainable production and consumption, to name but a few, which are becoming imperatives in the process of awareness, skills, values, and technical knowledge formation of the new generation of learners.

The curriculum in TVET is not spared from responding to the up-and-coming theories and concepts that lead to sustainable practices in the industries and the workplace that will absorb TVET graduates. However, the process of reorienting TVET towards sustainable development is broader and more pervasive than that of revising syllabi and devising new teaching and learning materials that incorporate principles and examples of global citizenship and sustainability. In fact, it gives emphasis on the new role of teachers that also open up new ways of thinking and further shifts in paradigms.

The changing role of teachers therefore must be parallel with the changing contents, knowledge structure and skills components envisaged from the above scenarios. In order to develop effective curriculum, teachers must be curriculum leaders. Ensuring that teachers are central to the reformation of curriculum will enable the development of pedagogy that provides the most favorable condition of learning and the highest quality learning outcomes for all students (Aina, 2010).

To reorient a curriculum to address sustainability, educational communities need to identify the knowledge, issues, perspectives, skills, and values central to sustainable development in each of the three components of sustainability – environment, society, and economy – and integrate them into the curriculum. The education community also needs to decide which of the many existing sustainability issues (e.g., biodiversity, climate change, equity, and poverty) will be part of the curriculum. Ideally, efforts to reorient education will be based on national or local sustainability goals. A properly reoriented curriculum will address local environmental, social, and economic contexts to ensure that it is locally relevant and culturally appropriate. In an effort to save time or resources, governments have imported curricula from other countries or regions. In the case of Education for Sustainable Development (ESD) a United Nations program that defined as education that encourages changes in knowledge, skills, values, and attitudes to enable a more sustainable and just society for all this is inappropriate, because local and national sustainability goals and local contexts will not be well targeted.

This paper attempt to look at the NCE Vocational and Technical Education Minimum standard (curriculum), with aim to highlight areas of deficiency in terms of the mandate of the NCCE curriculum reform considering the 2030 agenda for Sustainable Development goals (SDG)

especially the Goal No. 4 that emphasizes on the quality education. The entire reform is based on changing the teaching-learning methodology to a resourced-based learner centered approach. This paper discusses some of the resource-based strategies; including use of educational technology, online learning resources, learning theories for teaching methods, pedagogy development etc. as re-orientation to the NCE curriculum for TVET educators to meet the needs for quality education for the achievement of sustainable goals.

Philosophy and Objectives of the NCE-TVE Curriculum

The new NCE-NCCE minimum standard for the TVE (FRN, 2012-2017) encompasses Vocational Agriculture, Business Education, Fine and Applied Arts, Home Economics and Technical Education. The curriculum elaborates the philosophy and objectives of each aspect of the TVE program.

Vocational Agricultural Education

The Vocational agriculture is tied with the national philosophy on agriculture for self-reliance based on the provision of teachers endowed with balanced approach between principles and practice of agriculture for academic and vocational ends. The program has the objective of:

i. Preparing graduates with right attitude to, and knowledge/professional competence in vocational agriculture.

ii. To produce teachers who will be capable of motivating students to acquire interest in and aptitude in agriculture.

iii. To develop in the student-teachers the appropriate communicative skills for effective transmission of agricultural information and skills to the students in the context of their environment.

iv. To equip the student-teachers with adequate knowledge and ability to establish and manage a model school farm effectively.

Business Education

The philosophy of the Business education in the NCE-NCCE new curriculum is make business educators understand the concept of National policy on education as regards business Education in national development. The program is aimed to achieve the following:

i. To produce NCE business teachers who will be able to inculcate the vocational aspects Business Education into the society.

ii. To produce NCE Business Teachers who will be involved in the much-desired revolution of vocational development right from the primary and secondary schools.

iii. To equip students with necessary competencies to qualify them for post-NCE degree

program in Business Education.

iv. To equip graduate with the right skills that will enable them to engage in a life of work in the office as well as for self-employment.

Fine and Applied Arts

The philosophy of the Fine and Applied Arts program is to provide academic and professional training for NCE Teachers in Fine and Applied Arts. It aims to develop student's aesthetic perception, artistic talent and expression as well as stimulate interest and enquiries in the practical and theoretical areas, particularly as they affect the teaching of art at the primary and junior secondary school levels. The program is design to achieve the following objectives:

i. Training professional art teachers to fill the manpower needs of the primary and junior secondary schools.

ii. Equipping and providing the teachers with knowledge, understanding and skills in fine and applied arts.

iii. Developing in the would-be teachers the ability to communicate effectively through the arts and;

iv. Equipping NCE-Fine arts graduate with manipulative skills which will make them self-reliant job creators.

Home Economics Education

The philosophy of the vocational Home Economics Education in the new NCCE curriculum borders in the improvement of the quality of life of the individual's family, by equipping them with relevant knowledge, attitude, and skills for productive and effective life. The program focuses on effective development and utilization of resources for meeting the roles and aspirations of the family and societies. It also equipped individuals for entrepreneurship.

The objectives of the Home Economics Education are to:

i. Train Home Economic teachers with a sound basis for professional growth and personal development in Home Economics Education.

ii. Equip the student-teachers with entrepreneur skills for self-employment and self-reliance.

iii. Prepare teachers to qualify for a post NCE programs in Home Economics.

Technical Education

The philosophy of the NCE Technical Education is to provide technical teachers with intellectual and professional background adequate for teaching technical subjects and to make

them adaptable to changing situation in technological development not only in the country but also in the world at large. The Technical Education program is design to achieve the following objectives:

i. To produce qualified Technical Teachers and Practitioners of technology capable of teaching basic technology in Junior Secondary Schools.
ii. To produce Technical NCE Teachers who will be able to inculcate Scientific and Technological attitudes and values into the society.
iii. To produce qualified Technical Teachers motivated to start the so much desired revolution of Technological development right from Nigerian Schools.

To achieve the aforementioned objectives of the NCE-TVE programs, the curriculum identifies a number of courses relevant to the program. Identified courses that are deemed very important are classified as compulsory or core and courses that are relevant but not compulsory in achieving the objectives were classified as elective. The general minimum graduation requirements for the NCE-TVE programs were spelt out by the curriculum as follows:

General Education	30 credits
Teaching practice	6 credits
General Studies	18 credits
Technical and professional vocational components	64 credits
Total Credits	118 credits

All the NCE-TVE programs are double majored and therefore cannot be combined with any other subject area as the case may be with non-TVE programs in the curriculum. The double major nature of the NCE-TVE curriculum gave an ample opportunity for the programs to include a wide range of areas of relevant skills to be acquired during the training.

Observed Limitations of the New VTE-NCE Curriculum

The new reform of the NCE minimum standard reduce the number of credit unit of the VTE general courses from five (5) to only three (3) for vocational agriculture, Business Education and Technical Education programmes. Although the content of the curriculum remained, the reform reduces the number of credit unit of the VTE courses taking at both foundation and high levels. The implication is that while the two-hour time is divided for the theory and practical and or tutorial, the reduction had left the instructions without the tutorials and practicals.

Secondly, the aspect of VTE is taught only at the lower level of the NCE program, the high levels VTE course emphasized on the entrepreneurship in VTE. The curriculum laid emphasis only to identifying business opportunities and how to own a business in vocational Agriculture,

Home Economics, Fine and Applied Arts etc.

Other important issues of concern are the process of the curriculum implementation. The curriculum fails to identify the teaching methodology to be adopted, the desired instructional teaching aids and instructional materials needed to achieve the objectives of the TVE programs are also lacking in the new reform.

STRATEGY TO ENHANCE NCE-TVE CURRICULUM

Using OER as Learning Resources

Learning resources are texts, videos, software, and other materials that teachers use to assist students to meet the expectations for learning defined by provincial or local curricula. Before a learning resource is used in a classroom, it must be evaluated and approved at either the provincial or local level.

The NCCE curriculum reform calls for new ways of teaching that are more learner centred. This requires that classrooms should become more activity and resource based. This therefore explores the nature and potential of learning resources (LR) in support of more interactive classrooms. This paper identifies a number LR can be explore in the delivery of TVET curriculum in Colleges of Education. Among which include the Online Educational Resources (OER). Online Educational Resource (OER) has emerged as a concept with great potential to support educational transformation. While its educational value lies in the idea of using resources as an integral method of communication of curriculum in educational courses (i.e., resource-based learning), its transformative power lies in the ease with which such resources, are digitized, and shared via the InternetAdelman and Tailor (2015). Importantly, there is only one key differentiator between an OER and any other educational resource: its licence. Thus, an OER simply are educational resources that are openly available for use by anyone, without an accompanying need to pay royalties or licence fees.

The use of OER is not confined to eLearning contexts or distance education. Although they are for the most part born digital, many if not most OER can also be printed out and used in analogue contexts. Most OER are technologically neutral in that they can theoretically be reformatted or refitted for use in any platform or in any learning management system or application. OER can be used online or in traditional classrooms, or in blended or flexible learning contexts. This includes a focus on the importance of interoperability for both learners and instructors, in their free re-use or repurposing of the resource, including mixing and mashing.

There is no single paradigm associated with OER, nor are there any preconceived approaches to learning that limit the generalizability of OER. On the other hand, individual OER can be specifically designed to support particular theories of learning, whether that is behaviourist, constructivist, connectivist or something else. The OER concept can accommodate a wide range of theories. In addition to openness, eclecticism may be the theory most nearly associated with the OER movement. Educators using OER can draw on multiple theories, mixing and mashing

them to fit what they feel is reasonable given their particular context. Pragmatism that links practice and theory in order to improve both can also be an important theory associated with OER. Pragmatists consider the practical effects of using OER and base their decisions on these.

So, OER, as freely available learning objects encapsulating learning resources, are pedagogically neutral and, as a concept, can lend to any learning theory. OER proponents in different theoretical "camps" of learning, such as constructivist, connectivist or behaviourist, can design their OER either to support their theories uniquely or to be more generalizable in a wider variety of learning contexts. Likewise, educators can make effective use of OER according to their theoretical approach, which could be easier or more problematic depending on the theoretical perspective that is embedded in the OER. There is no one theoretical camp that can claim ownership of OER from a pedagogical perspective. Independent learning is often connected to OER, but OER are also used in classroom, blended learning, and distance education environments. Panke and Seufert (2012) noted that there is "no one-size-fits-all theory that allows us to understand all aspects of the learner's use of OER."

Using Educational Technology

Educational Technology prepares teacher educators to face the changing and challenging situations in our school's system. Most classrooms are overpopulated, the facilities are inadequate or even lacking, the textbooks are expensive and other educational resources are inaccessible. Poor teaching and learning are the obvious consequences of these challenges. In order to overcome these challenges, Teacher Educators need to update their knowledge and use of Educational Technology to enhance effective classroom instructions (Alterator & Deed, 2013).

Educational technology is the use of both physical hardware, software and educational theoretic to facilitate learning and improving performance by creating, using, and managing appropriate technological processes and resources. ET are used in the classroom as tools such as electronic whiteboards, flipped learning, desktops and laptops videoconferencing classroom technologies, mobile phones,

Selecting the appropriate educational technology depends on the topics, needs and situation. TVET Teacher Educators need to acquire the skills to effectively utilize mobile learning technology to support more engaged learning. There is need to enhance the ability of teacher-educators to access Open Educational Resources (OER) using Educational Technology to support more effective learning.

In a modern perspective, People learn better when multimedia messages are designed in ways that are consistent with how the human mind works and with research-based principles (Mayers, 2003). The use of instructional materials in meeting the challenges of learning to ensure better academic performance of students should not be underscored. Students learn better when adequate instructional media and materials are designed, produced, and packaged to complement teacher's effort (Ajayi-Dopemu, 1989).

The need to select an appropriate educational technology to suit the various purposes for different class sizes had been emphasized in many teacher education programmes in Nigeria. Classrooms in various schools in Nigeria are of different sizes, some classes are small with student population of 30 – 40 students. This class size can be considered as small size classroom. Others are very large classrooms with capacity of 150 – 200 students. The TVET teacher educator need to consider these class sizes in selecting appropriate educational technology for students centred learning.

Various Educational Media/Instructional media are used nowadays to impart knowledge to different learners in various class sizes. Some of these Educational Technology materials and equipment include both projected and non-projected instructional media. The projected media include the multimedia projectors overhead projectors, slide projectors, filmstrip projectors, opaque projectors, 16 mm and 32 mm cinema projectors. The non-projected include the radio, the television, computers, prints, cartoons, posters, newspapers, magazines, bulletin boards, magnetic boards, graphs, charts, textbooks, maps, globes, charts, resources in the community, and public address systems.

Teaching and Learning Methods

For teaching and learning to be successful, several factors need to be considered: these include the learning environment, the learners, teaching-learning resources, methods of interaction and the teacher him- or herself.

This section of the paper will expose TVET teacher educators to contemporary methods of teaching and learning various school subjects. In addition, it will provide useful suggestions to TVET teacher educators on how to use these methods for effective classroom interactions among student-teachers and teacher-students in achieving lesson's objectives. The whole aim is therefore to help TVET teacher educators create an enabling environment that encourages active learning among student-teachers through the use of different methods and learning resources including technology-based materials in teaching and learning different content areas of various subjects especially at the Universal Basic Education level. Some of these methods include problem solving, concept-mapping instructional method, discovery method, inquiry method, project method, role playing method and computer assisted/aided instructions. The following are few examples of how teacher educators could use these methods for effective teaching of their subject areas.

Problem Solving

Problem solving is a technique that involves identifying and selecting problems which grow out of the experiences of individual learners, placing these problems before them and guiding them in their solution. Problem solving as a teaching technique is one of the curriculum reforms that have been emphasized in teaching various school subjects in teacher education programs in order to prepare students become effective problem solvers.

Inquiry based method

Much like a woodworker continually acquires new tools to perform different tasks in his shop, educators, too, should search for tools to add to their repertoire of educational practices. One tool is not sufficient to do every task a woodworker must complete, and one teaching method should not be considered sufficient for teaching all topics and meeting all standards. Inquiry-based teaching methods provide teacher educators with another teaching technique for developing life-long learners. They prove especially useful in delivering concepts that rely heavily on science. Teachers play a vital role in adapting the inquiry process to the knowledge and ability level of their students. When using inquiry-based lessons, teachers are responsible for:

1. starting the inquiry process;
2. promoting student dialog;
3. transitioning between small groups and classroom discussions;
4. intervening to clear misconceptions or develop students' understanding of content material;
5. modeling scientific procedures and attitudes; and,
6. utilizing student experiences to create new content knowledge.

Based on the objectives of the lesson and the abilities of the students, teachers must decide how much guidance they will provide. Regardless of the amount of assistance that teachers provide, the fundamental goal of inquiry is student engagement during the learning process.

When incorporating inquiry-based methods into the classroom, educators should ensure that each of the six stages of the inquiry cycle, as shown below, is complete.

Six Stages of the Inquiry Cycle

1. Inquisition – stating a "what if" or "I wonder" question to be investigated
2. Acquisition – brainstorming possible procedures
3. Supposition – identifying an "I think" statement to test
4. Implementation – designing and carrying out a plan
5. Summation – collecting evidence and drawing conclusions
6. Exhibition – sharing and communication results (Llewellyn, 2002, p. 13-14)

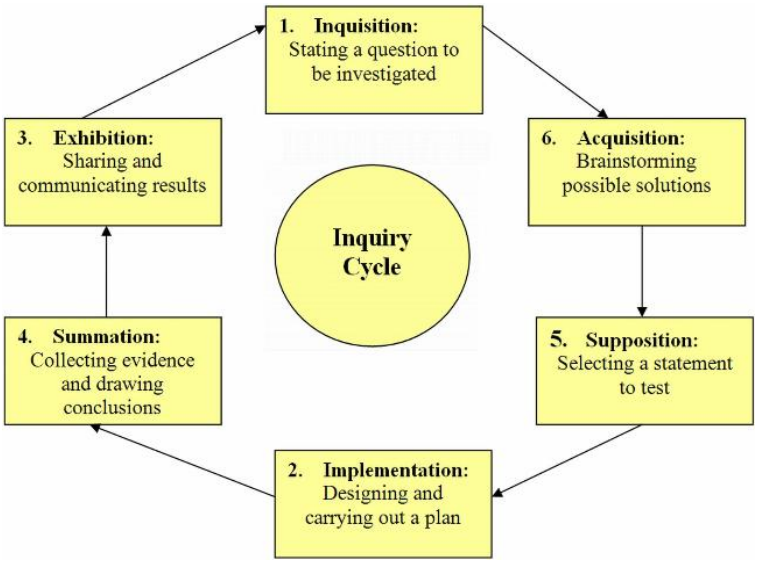

Figure 1. The inquiry cycle. Carin, Bass, & Contant (2005)

Small Group Discussions

This is a more complicated form of discussion. A teacher breaks the class up into small groups and provides them with talking points that they must discuss. The teacher then walks around the room, checking on the information being shared and insuring participation by all within the group. An example of when this method of discussion would work well would be when students have read a novel and are sharing information based on questions posed by the instructor. However, the teacher must have a good handle on classroom management to ensure that the discussion groups stay on topic.

Role Play

Role play involves getting the students to take on different roles as they explore and learn about the topic at hand. For example, in a foreign language class, students might take on the role of different speakers and use dialogues to help learn the language. It is important that the teacher has a firm plan for including and assessing the students based on their role playing.

Simulation

Simulations are slightly different than role playing in that students become involved in a situation and have to use what they have learned and their own intellect to work through the simulation. For example, a government simulation might have the students create a model legislature where they must create and pass legislation. These have a great ability to be interest building but also require the teacher to make clear how each student will be assessed for their participation.

Software or Internet Exploration

Teachers can use this method to help guide student learning as they use the internet or a particular software program to learn information for the lesson. For example, a student might complete an online scavenger hunt. This requires a teacher to have come up with sites and questions for the student to answer.

Group Work

Teamwork is very important in the business world and many business leaders complain that students come out of school without the necessary skills to effectively work as a team. Therefore, it can be extremely useful to include group work in the classroom setting. It is important that as a teacher, you stay on top of how much each individual is contributing to the team and build in a system to give students grades based on their participation.

The dynamics of globalization, plus the introduction of information and communication technologies (ICT), resulted in a tidal wave of information that requires careful streamlining and the use of appropriate methodology for content selection and engagement. In the scenarios presented in this section, there are ranges of activities that focus on the modern approaches in teaching and learning. TVET Teacher educators are expected to decide and adopt methods that will provide challenging activities the learners will undergo to improve their understanding about the concepts and develop their ideas in concrete terms leading to construction of ideas. A deliberate attempt can made to introduce a radical departure from the conventional delivery methods which centred mostly on face-to-face contact with the teacher educators.

CONCLUSION

TVE-NCE curriculum had potentials in achieving sustainable development goals especially, the need to achieve inclusive quality education in the year 2030. The paper discusses the various approaches to achieve curriculum content delivery that were observed not stipulated in the minimum standard. This paper emphasised the need to model the current trend where the TVET teacher educators will be engaged through the use of learning resources and technological tools and modern learning methodology to enhance individualized teaching and efficient learning.

REFERENCES

Adelman, H.S. & Taylor, L. (2015), Transforming Student and Learning Supports: Developing a Unified, Comprehensive, and Equitable System. Thousand Oaks, CA: Corwin Press.

Aina, T, A. (2010) Beyond Reforms: The Politics of Higher Education Transformation in Africa. African Studies Review, 53(1):21-40.

Alterator, S and Deed, C. (2013), Teacher adaptation to open learning spaces. Issues in Educational Research, 23(3):315-130. Ambrose, S.A., Bridges, M. W., DiPietro, M., Lovett.

Carin, A. Bass, &J.E. Contant (2005) Methods of Teaching Science as Inquiry, Upper Saddle River, N.J,: Pearson/Merrill Prentice Hall. Chicago.

Federal Republic of Nigeria (2012), Nigerian Certificate in Education Minimum Standards for Vocational and Technical Education 2012 Edition.

Norman, M. C., and Mayer, R.E. (2010). How learning works: Seven Research-Based Principles for smart.

NCCE & TDP. 2015. *Introduction to Leaning Resources (LR) for Teacher-educators. A module of the NCCE-TDP continuing professional development programme for teacher-educators*. Abuja: National Commission for Colleges of Education and Teacher Development Programme (NCCE & TDP).

World Bank Report (2003). Lifelong Learning in the Global Knowledge Economy: Challenges for Developing Countries. Washington, D.C: The World Bank.

REPOSITIONING UNIVERSAL BASIC EDUCATION (UBE) IN NIGERIA THROUGH QUALITY TECHNICAL VOCATIONAL EDUCATION AND TRAINING (TVET) FOR SUSTAINABLE DEVELOPMENT.

Ogunkelu Maria Oluwatoyin, Oludolapo Jaiyeola Onipede, Yinusa Oyeniran Jinadu, Anslem Njoku Chiso, and Oladimeji Obembe

ABSTRACT

Nigerians have steadfastly held believe that education is the fortification against poverty and social unrest and that schools have a central role in equipping young people with the skills and attitudes they need to sustain future economic and social development. Thus, Federal Government introduced Universal Basic Education scheme to cater for the educational needs of young students and pupils in the first nine years of school age but the aim and objectives of establishing basic education is yet to be achieved. This paper examines the concept of universal basic education and its importance as well as technical vocational education and training and sustainable development and also the problems inhibiting the development of U.B.E., role of TVET in repositioning U.B.E., how to reposition U.B.E., for Sustainable National Development and steps towards proper repositioning of U.B.E. The paper concluded by saying that education is the pivot around which other spheres of Nigeria economy revolves and that unfortunately, education in Nigeria has suffered unpardonable and unforgivable neglect over the decades with Universal Basic education having more than its fair share of the deplorable phenomenon. The paper recommended among others that the Government should increase funding of Universal Basic Education to enable it produce students that are self-reliant in this competitive economy and that students centered teaching/learning exercise need to be used to encourage active participation of the students in Universal Basic Education.

Keywords: Repositioning, Universal Basic Education; TVET and Sustainable Development.

INTRODUCTION

Re-positioning is the fundamental re-thinking and radical redesign of business processes to achieve dramatic improvements in critical contemporary measures of performance, such as cost, quality, service, and speed; as a consequence of scientific and technological developments (Egun & Egun 2015). Re-positioning in education is a process of reforming, redefining, redirecting or even re-modelling of an existing structure to meet the demands of current situation. Omeniyi (2010) opined also that re-positioning in education involves renovation of education concepts, policies, structures, and strategies with the view of achieving identifiable objectives. Repositioning in this context, refers to the positioning of basic education due to the declining performance of the students and also due to major shift in the environment. To successfully reposition basic education, there is the need to make the populace to understand the meaning, need and challenges of universal basic education.

Education is perceived by many as a tool that transforms one's life and makes an individual to reason and behave in a way that is acceptable by the society. Education starts the very moment one is born and ends when he finally dies. This process of education is one which involves several activities on the part of several people including the teacher, the parents, pupil, the government, and every citizen of the country. Okpala (2008) opined that education is a process that emphasis development, acculturation and learning how to learn. Ukeje, (2000) stated that, it is important to make education compulsory and effective for all citizen because it is so powerful that it can lift up or impoverish and individual or a nation. Ochoyi and Danladi (2008), stated that education is generally concerned with the transmission of worthwhile values such as skills, knowledge and planned activities that can develop learners' potentials for national development. In the opinion of Obong (2006), some of the corrupt practices, unprofessional and anti-social behaviors we observe at all levels of society today, including the aggressive disruptive ones in our political, social, and economic lives, result directly from the neglect of character education at home and in schools. Obong (2006) went further to emphasize that we see education merely as number of credits in WAEC and NECO scores and that the neglect of character education at all levels, he said, comes with a price, as no nation can aspire to join the committee of developed nations without character and respectability. Omotayo, Ihebereme and Maduewesi (2008) stated that quality education can be viewed as specific standard of education attainable against the backdrop of the existing international standard. Such education must be functional. Akubuilo, (2008) described functional education as that which emphasizes technological growth, self-employment, self-reliance, positive nation building, job performance, competency, life skills and lifelong education. Functional education can be achieved when universal basic education aims are achieved.

Concept of Universal Basic Education (UBE)

Universal Basic Education is the transmission of fundamental knowledge to all facets of the Nigerian society from generation to generation. It has three main components— Universal, Basic and Education. Universal connotes a programme that is meant for all facets of the society,

the rich and poor, the physically fit and disabled, the brilliant fit and dull, the regular students and dropouts including every other individual that is ready to acquire knowledge (Amuchie, Asotibe & Audu, 2013). The term "basic" relates to the base, take off point, fundamental, essential, springboard and bottom line that is required and of course expected. It therefore shows that basic education is the starting point in the acquisition of knowledge. Without basic education, higher education cannot be acquired. It therefore implies that basic education is mandatory for all citizens, and it is that type of education that can help an individual function effectively in the society (Adeyemi, 2007). Enoch and Okpede (2000) described it as that form of education which is essential for life. They also saw UBE as the form of education which must equip an individual with necessary skills to survive in his environment and that it should be a practical and functional education. The idea of "Education" connotes transmission of knowledge from general to generation. In the UBE programme, it is expected that theoretical and practical knowledge must be transmitted to learners in its simplistic form. This involves starting from the scratch and being able to carry the leaner along. This education is the "aggregate of all the processes by which a child or young adult develops the abilities, attitudes and other forms of behaviors, which are of positive value to the society in which he lives" (Fafunwa, 1974). In alignment with the above, Nwagwu (2002), is of the view that the aims and objectives of Universal Basic Education are as follows:

- Developing in the entire citizenry a strong consciousness for education and a strong commitment to its vigorous promotion.
- Reducing drastically the incidence of drop out from the formal school system, through improved relevance, quality, and efficiency.
- Catering for young persons who for one reason or another have had to interrupt their schooling as well as other out of school children, adolescent, through appropriate forms of complementary approaches to the provision and promotion of basic education.
- Ensuring the acquisition of appropriate levels of literacy, numeracy, manipulative, communicative and life skills, as well as ethical, moral, and civic values needed for laying a solid foundation for lifelong learning.

The Universal Basic Education Act (2004) defines Universal Basic Education as early childhood care and education, the nine years of formal schooling, adult literacy, non-formal education, skills acquisition programs, the education of special groups such as nomads and migrants, girl-child, and women, almajiri, street children, disabled groups and technical vocational education and training.

Concept of Technical Vocational Education and Training

TVET refers to deliberate interventions to bring about learning which would make people more

productive (or simply adequately productive) in designated areas of economic activity such as economic sectors, occupations, and specific work tasks (Okwelle 2013). Alhasan and Abdullahi (2013), opined that technical and vocational education and training plays an essential role in improving the wellbeing of youths and communities and increases productivity, empowers individual to become self-reliant and stimulates entrepreneurship. Ozoemena, (2013), defined TVET as a comprehensive term referring to those aspects 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 occupants in various sectors of economic and social life. Uwaifo (2010) described TVET as that training of technically oriented personnel who are to be the initiators, facilitators, and implementers of technological development of a nation by building adequately training its citizenry and the need to be technologically literate, leading to self-reliance and sustainability. TVET thus equips people not only with vocational and technical skills, but with a broad range of knowledge, skills and attitudes that are now recognized as indispensable for meaningful participation in work and life (Okwelle & Deebom, 2017). It entails the enrichment of the capabilities that influence the effective psychomotor or cognitive domains of individual in readiness for entry into the world of work to satisfy their intrinsic and extrinsic needs, values, work, and aspirations such that local and national needs would be met.

Problems inhibiting the Development of Universal Basic Education Programme in Nigeria: The Need for Repositioning of Universal Basic Education.

The Universal Basic Education Scheme was planned to bring about positive change in our educational system through quality, functional and free education, but this dream has met bottlenecks, barriers through high enrolment with inadequate classroom space, lack of laboratories, dilapidated infrastructure, employment of unqualified teachers, lack of fund, these have among others hindered the good implementation of the programme. Teachers' appointment and development tends not to be based on supply and demand, in part due to lack of reliable data, but also because the process is prone to political interference. Professional teachers' shortage exists in some states and /or local government areas and tend to be higher in remote rural areas. Furthermore, there is a mismatch between teacher training, specializations and appointments with primary school trained teachers often ending up as secondary school teachers. Classroom conditions also vary across states and local government area, many schools lack classrooms or the classrooms they have are dilapidated and overcrowded with inadequate furniture and no usable chalk board, making it virtually impossible for meaningful teaching and learning to occur (Humphreys & Crawfurd, 2014). Nakpodia (2011) indicated that the short supply of professional teachers led to the employment of "market women" and "half-baked individuals". This unwholesome development is not good for a country that is striving to attain Sustainable National Development. In the same vein, Amuchie, Asotibe and Audu (2013), stated that the factors that may lead to the failure of UBE in Nigeria are as follows:

1. Poor Planning

2. Inadequate Funding
3. Lack of Qualified teachers.
4. Poor Implementation
5. Population Explosion (Increase in enrolment).

Concept of Sustainable National Development

Development is the transformation of community into socially, economically, politically, educationally, orderly, and materially desirable conditions, with the aim of improving the quality of life of the people. It is also referred to as the uniform distribution of resources, the integration of the people into national economy; it is a socio-economic process which seeks to bring about a more equitable distribution of resources and income within the society (Lawal & Olukayode, 2012). According to Ohagwu (2010) development is not the same thing as change, growth, or modernization, but the nature, content, and course of a society, it is the choice about goals for achieving the realization of human potential. Gboyega (2002) described development as an idea that embodies all attempts to improve the conditions of human existence in all ramifications. It implies improvement in material well-being of all citizens, not the most powerful and rich alone, in a sustainable way such that today's consumption does not imperil the future, it also demands that poverty and inequality of access to the good things of life be removed or drastically reduced. Development seeks to improve personal physical security and livelihoods and expansion of life chances if it is sustained.

Sustainable development is the concept of a relationship between economic growth and the environment. The term was first used in 1987 by the World Commission on Environment and Development (also known as the Brundtland Commission for its chair, Gro Harlem Brundtland). In the commission's report, "Our Common Future," it defined sustainable development as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (World Commission on Environment and Development 1987). Munasinghe (2004), opined that sustainable national Development is a process of improving the range of opportunities that will enable individual humans and communities to achieve their aspirations and full potential over a sustained period while maintaining the resilience of economic, social, and environmental systems. Age (2005) stated that for sustainable development to be achieved, the following objectives must be made: increase capital income and employment, promoting human welfare, satisfying basic needs, and protecting the environment. Having stated above, the various definitions of education and sustainable national development, it is imperative to examine the relationship between the two concepts. In all nations, Nigeria inclusive, education remains the instrument for effective national development. Development is championed through education, which is often assumed to have significant influence. Education entails the enlightenment of people in their ways of pursuit in life. Development is associated with a positive change in the condition of either individual groups, communities or even a country as a whole (Umoh, 2005). Education and sustainable national development are interwoven, intertwined, and interconnected. While on the

one hand, development is geared towards producing or creating something new or more advanced for the society and its members. On the other hand, education is a tool which can enhance the desired sustainable development. Umoh (2005) opined that education and sustainable development are two sides of the same coin. The fact that education and sustainable development shows glaring connectivity probably explained why scholars emphasized the need for education for the purpose of achieving the desired sustainable development.

The Role of TVET in Repositioning of Universal Basic Education for Sustainable Development

It is obvious that TVET plays an important role in the preparation of the citizenry both vocationally and professionally for divergent careers in the world of work. The numerous roles of TVET in a dynamic business environment are as glaring as they prepare educators to cultivate creative behavior to the students to become job creators and be able to fit in to the society effectively. This enhances job creation and entrepreneurship development (Rufai, 2013). According to Osuala (2004), TVET graduates understand the economic system and therefore can intelligently position them in a manner that they can take advantage of latent choices which abound by the uninitiated. Recipients of TVET are well groomed for manifold purposes in the society. It produces specialists for various fields such as Business Management, Automobile Technology, Metal work, Building Technology, Agricultural Education to mention but a few. This creates avenue for career opportunities which has tremendous impact on global economy. This is more so in the light of the contextual issue facing the discipline in the present-day Nigeria. TVET represents a broad and diverse discipline that is included in all types of educational delivery systems. Its objective is to prepare entrepreneurs, managers, and employees for effective work relationship with the institutions of business and to give extension and rehabilitation education to those already employed in business occupations. TVET can be seen as a veritable tool of overcoming the precarious unemployment situation in the nation. Unemployment as a social menace is assuming an upward trend in the world today and is posing serious threat to global economy on daily basis. TVET has the necessary potentialities and capacities to reverse this trend and halt the present rural– urban drift and/or migration by elites. Training acquired in TVET is capable of making graduates to be self- employed through the acquisition of adequate skills to make them mentally and manually dexterous so as to contribute modestly to the global economy (Rufai, 2013).

How to Reposition Universal Basic Education for Sustainable National Development in Nigeria

In realization that a well implemented Universal Basic Education programme will pave the way for sustainable national development of Nigeria, the following Repositioning strategies are hereby advanced:

1. Monitoring of Educational Expenditure and Checking the Incidence of Fraud: The UPE programme was characterized by reckless spending, wastage, and fraud One of the major reasons for establishing an inspectorate service is to monitor the expenditure of public fund Monitoring and evaluation is very important to check the quality of delivery of the whole UBE programme.
2. Government's discriminatory attitude in funding universal basic education should be stopped forthwith in order to redress this imbalance and purchase basic equipment needed for teaching Universal Basic Education subjects.
3. Since Universal Basic Education programme gives its recipients the skills they need to help them out of poverty and into prosperity, supports the growth of any society, democracy, and political stability, allowing people to learn about their rights and acquire the skills and knowledge necessary to exercise them (Amoor, 2010).Then Government, Education Planners and Policy Makers should embrace this strategy if universal Basic Education must play its role for sustainable national development in Nigeria.
4. School Administrators: School Administrators should be ready to thoroughly supervise the teacher for effective delivery of the educational content. The school administrator plays vital role of final implementation if all other indicators of success are in place but at the end of the day students are not properly taught.
5. Training and Retraining of Teachers: We are living in changing world and the teachers meant for the UBE programme need to keep pace with fast technological changes. To effectively achieve this, the teachers need to be trained and retrained regularly so that their content, method, and instructional materials may not turn obsolete.

Steps towards Proper Repositioning of UBE

1. ***Adequate Funding:*** UBE scheme, judging from its provisions is obviously capital intensive and so requires adequate funding for the programme to succeed. Government should therefore strive to make funds available for the proper implementation of the programme.
2. ***Provision of Infrastructure and other facilities in schools:*** educational facilities are imperative to qualitative UBE programme in Nigeria. Facilities such as textbooks, libraries, classrooms, seats and tables, laboratories, computers, technical/vocational equipment, electricity, among others are all very important for the effective implementation of the UBE scheme. There is therefore the need for adequate supply of these facilities and such facilities when provided should not be diverted.
3. ***Recruitment of enough competent teachers:*** There is also need for recruitment of enough trained teachers for the effective implementation of the UBE programme.

There should also be re-training of teachers already on the job to ensure that they update their knowledge base.

4. ***Better Motivation for teachers:*** Teachers should be properly motivated to render quality service by regular payment of their salaries and improvement in what they are paid. With adequate motivation and remuneration, the teachers can then work with renewed spirit and commitment to the UBE scheme.
5. **Effective Monitoring/Evaluation**: The program should be monitored and evaluated regularly to ensure that the system does not deviate from the set goals.

CONCLUSION

Education is the pivot around which other spheres of Nigeria economy revolves. Unfortunately, education in Nigeria has suffered unpardonable and unforgivable neglect over the decades with Basic education having more than its fair share of the deplorable phenomenon. Noting the utilization of unqualified/under qualified (untrained) and not-committed teachers, inadequate/ decayed facilities due to poor government funding, curriculum defects both in application and contents among others, it is not far-fetched to understand the down slide in the implementation of Basic education programme. Thus, the educational improvement in basic education could not have come at a more favorable time when Nigeria yearns for economic development so as to belong to the community of developed nations. This will, to a considerable extent, enhance the realization of the dual objectives of individual and sustainable national development which is the focal point of this research work in Nigeria.

RECOMMENDATIONS

In view of the above, if Nigeria must keep pace with the rest of the world in this era of global competition via Universal Basic Education, these propositions as condensed should be taken into consideration.

- Students centered teaching/learning exercise need to be used to encourage active participation of the students in Universal Basic Education.
- Government should increase funding of basic education to enable it produce students that are self-reliant in this competitive economy.
- Only qualified teachers and administrators should be recruited to teach and administer courses at all basic educational levels. The already recruited ones who are deficient in skills should as a matter of urgency upgrade their skills and knowledge.
- The Stakeholders and the Policy makers in universal basic educational sector should restructure basic education curriculum in such a manner that more scores and time be allotted to practical work exercises than theoretical studies.

REFERENCES

Alhasan, N.U & Abdallahi, T. (2013). Revitalizing technical vocational education and training (TVET) for youth empowerment and sustainable development, Journal of Educational and Social Research, 3(4).

Adeyemi, T.O. (2007). Teacher preparation and availability for achieving Basic Education in Ondo State, Nigeria. *Humanity and Social Sciences Journal, 2*(2), 159-168.

Age E. (2005). Objectives of Teaching Education in Nigeria. London, British Council.

Akubuilo, D. U. (2008). Achieving sustainable economy through sustainable development education. NASHER Journal 6 (3) 60-71.

Amoor, S.S. (2010). The need to improve teacher quality in business education in Nigerian Universities. *International Journal of Education Research 11(1)* 1-11.

Amuchie, A. A., Asotibe, N. & Audu, C. T. (2013). An appraisal of the universal basic education in Nigeria. *Global Journal of Management and Business Research Administration and Management. Vol. 13(11)* Pp: 1-7.

Bruntland Commission, (1987). Development Report on Sustainable Development, New York.

Egun, A. C. & Egun, N. K. (2015). Re-engineering agricultural education for sustainable development in Nigeria. International Research Journal of Curriculum and Pedagogy. Vol. 1 (1), pp. 002-005.

Ochoyi, U. E. and Danladi, P. (2009). Challenges for mathematics teachers in the teaching of measurement under the universal basic education (UBE) scheme in Nigeria. Journal of the Mathematical Association of Nigeria 34 (1) 85-90.

Emon. E.O. and Okpede, E.O. (2000). The meaning, history, philosophy and lesson of UBE. Proceedings of the 15th Annual Congress of the Nigerian Academy of Education. University of Benin 6— 9th Nov.

Humphreys, S. & Crawford, L. (2014). *Review of literature on basic education in Nigeria*. Education data research and evaluation in Nigeria. EDOREN.

Fafunwa, A.B. (1976). History of Education in Nigeria. London: George Allen and Unwin.

Gboyega, A. (2003). Democracy and Development: The Imperative of Local Governance. An Inaugural Lecture, University of Ibadan, pp. 6-7.

Lawal, T. and Olukayode, O.V. (2012) Democracy and Development in Nigeria, International Journal of Development and Sustainability, Vol 1 No 2, pp. 448-455.

Munasinghe S. (2004). Effective instructions through dynamic discipline. Ohio, Charles E. Merill.

Nakpodia, E.D. (2011). Teacher factors in the implementation of universal basic education programme in junior secondary school in the south senatorial district of Delta state Nigeria. *Journal of administration and policy research*, 3(10), 286-293. Retrieved from htt:// www.academicjournals.org/jpapr.

Nwagwu, N.A. (2002). For UPE to UBE: Some basic planning consideration for effective implementation of Programmes. In T. Ajaji JO, Fadipe PK, Ojedele Oluchukwu EE (eds) Planning and Administration of UBE in Nigeria. National Teachers Institute. Nigeria.

Obong, I. J. O. (2006). The state of basic education in Nigeria: The way forward. A paper presented at the 47th Annual Conference of Science Teachers Association of Nigeria (STAN) held at Calabar from 13th -19th August.

Ohagwu, C.A. (2010) Rural Development in Nigeria: issues, concepts and practice, Enugu, John Jacobs Classic Publishers Ltd.

Okpala, P.N. (2008). Evaluation driven educational programmes for sustainable National Development: The Roles of Institutes of Education in Nigeria. A Guest Lecturer delivered at the 60th Anniversary Celebration of the University of Ibadan P 2.

Okwelle, P.C. (2013). Appraisal of the theoretical models of psychomotor skills and applications to technical vocational education and training (TVET) system in Nigeria. Journal of Research and Development, 1(6), 25-35.

Okwelle, P.C. & Deebom, M.T. (2017). Technical vocational education and training as a tool for sustainable empowerment of youths In Niger Delta, Nigeria. *International Journal of Innovative Social & Science Education Research* 5(1):29-38.

Omeniyi AS (2010). Reforms and Transformation in Girl- Child Education Challenges in Millennium Development Goals. An Overview and Infrastructural Journal of Forum for Africa Women Educationalists Nigeria (IJOFAWEN) 2(2): 1 - 4.

Omotayo, D. M.;, Ihebereme, C. and Maduewesi, B. U. (2008). Management of universal basic education scheme for qualitative education in Nigeria. Retrieved 22nd July 2018 from www.questia.com/PM.qst;jessioni=l.....

Osuala, E. C. (2004). *Principles and Methods of Business and Computer Education*. Enugu: Cheston Books Ltd.

Ozoemena, S.A. (2013). Vocational and technical education: A tool for sustainable development in Nigeria, Journal of Education and Practice, 4(25).

Rufai, R.A. (2013). *Nigeria's attainment of vision 20:2020 depends on massive Business skills*. Federal Ministry of Education Weekly Bulletin 2(58). March 26.

Ukeje, B.O. (2000). Teacher education in Nigeria: current Status, 21st century challenges and strategies for improvement in Faculty of Education, University of Jos.

Umoh, A. (2005). Entrepreneurship education as a panacea for sustainable economic development of Nigeria. Journal of Research in Education and Society, 5, Number ISSN: 2141-6753.

Universal Basic Education Commission (2014), UBEC Building No: 7Gwani Street, Wuse Zone 4 Abuja Nigeria.

EMPOWERING AND CHANGING THE MINDSET OF VET TEACHERS BY INSPIRING NEW WAYS OF THINKING

Rumyana Shalamanova

ABSTRACT

Contemporary life and labour markets require teaching and training to focus on achieving the goals of the New Skills Agenda for Europe and the Europe 2020 Strategy. To ensure that these goals will lead to the best possible outcomes the educational systems need to be demand driven, designed to improve the quality and relevance of training, and make skills more visible and competitive to enable students to be competitive. Educators are facing new challenges as they are now not only educators but also advisers and mentors. The need for effective actions for supporting students in their choice of education, training and career is significant. Educators nowadays need innovative, attractive and easy to apply methods and tools to promote motivation and acquisition of knowledge and skills in their students. This article describes innovative tools and resources which will improve educators' abilities to develop in their students XXI Century skills by using collaborative, critical-thinking practices. The tools and resources are part of the Abacus Methodology.

Special Feature Editor's Note: *This article highlights an EU funded project and was deemed of interest to the readers by the journal. Because the purpose of this article is to disseminate information regarding a project, it does not feature any citations or references. The article was not subjected to a traditional peer review process and was published at the discretion of the editor.*

Building Inclusion through New Learning Methodology (BI-NEW)

In 2016 the European Commission adopted a New Skills Agenda for Europe, which aims to ensure that people develop a broad set of hard and soft skills from their early years. These skills are necessary for the jobs of today and tomorrow. While hard skills are clearly defined and measured, soft skills will be essential to boost employability, competitiveness and growth across the European Union. To meet these aims modern educational programs and school curricula should focus on developing critical thinking and analytical reasoning as a part of the XXI Century literacy skills. It is worth pointing out that the new curricula put challenges to both students and teachers. The teachers are not well empowered with new knowledge and skills to respond to contemporary requirements and the students face difficulties in achieving them. It is crucial to seek new ways of teaching and innovative methods for making education attractive, accessible, understandable, and inclusive. This will reduce the rate of ESL and will better prepare the students for the labour market.

The main aim of this project is to describe innovative methodology and OERs for mental arithmetic using Abacus (a board for calculating used since Vc.). Using these educators will facilitate students' personal and academic achievements through the development of concentration, photographic and muscular memory, creativity, and analytical thinking.

The uniqueness of this strategic partnership centres on two main pillars that are accepted as innovative ways of teaching: – attractive visual learning and learning in the form of a game. These both lead to encouragement, self-confidence, motivation and self-expression. Preparing the detailed Abacus Methodology for three age groups and moving it online will provide educators with new resources to improve basic skills in math, science and literacy of their students and create attractive and innovative educational environments. The methodology will equip educators with competencies that will make teaching more effective and assist in better performance of students. Using the Abacus Methodology students will be driven forward to achieve good learning results and will be provoked to learn and think in different directions. At the same time educators will be empowered with modern, attractive and innovative methodologies that can be used not only for school achievements but also for personal development.

It must also be highlighted that the intention of this innovative approach does not focus on arithmetic as a goal, rather on thinking to achieving the goal. Thus educators with little experience in using digital- or technological tools will be able to capture the main concepts and methodological background of mental arithmetic and will be able to use the Abacus concepts. Furthermore, educators will act as facilitators (guiding role), and ensure students will be at the centre of the learning processes and activities. This will stimulate higher independence and autonomy and allow more peer direct interaction to generate inclusion.

The main results of the project will be the development of the three intellectual outputs: Methodology for Mental Arithmetic (MMA); Repository with exercises, tools and evaluation Materials for Mental arithmetic (RMM) and the Abacus Portal with Generator of exercises.

The Methodology for Mental Arithmetic (MMA) for educators includes support and guidelines

for educators for using the Abacus as a tool for mental arithmetic. The main aim of the MMA will be to facilitate intellectual development of students which will result in habits like logical thinking, photographic memory, concentration and self-confidence. These habits will only be improved and increased in the future.

The MMA will be developed for three age groups: 6-7 year olds; 8-16 year olds and 16+ year olds in order to address the age peculiarity of each group. The MMA will include lesson plans aimed at increasing math, science and functional skills. Each lesson will be structured to a specified time and will include types of activities to stimulate all the perception channels – audio, analytical, visual and kinesthetic.

The Repository (RMMA) contains several key elements:

1. A set of methods explaining in detail how they are to be applied and what outcomes they may bring.
2. A box with 30 additional methods/tools for each of the three age groups (6-7 y.o; 8-16 y.o.; 16+ y.o.).
3. A set of instructions that provide a brief theoretical background of all concepts behind the categories of methods integrated within each box.

The Abacus Portal provides easy access to the following resources that might be of interest to the target groups: The MMA and the RMMA. Apart from that, the Abacus Portal's core function will be to create (generate) a practically unlimited variety of exercises in real-time with the use of its main component – Generator of Exercises.

The partnership working on this project comprises 7 organizations from 6 countries – Bulgaria, Poland, Italy, Greece, Spain and Turkey.

Promoting inclusion and a STEM curriculum in schools through the use of Tangible Programming concepts and activities (TangIn)

There has been a high demand in Europe for a STEM skilled labour force and this trend is expected to rise due to current and future consolidation and expansion into the physical world of more automated and digital technologies. There have been predictions that EU would have up to 825,000 ICT job vacancies by 2020 and that these would be difficult to fill due to the shortage of skilled labour force. Basic coding skills are also needed, as more than 90% of today's professional occupations require digital competencies, including programming.

ICT-based curricula need to be strengthened, even at primary school levels, to ensure that ICT skills needs are met in the future. The command of digital tools and programming skills/ concepts, as well as critical reasoning skills, should be considered a "universal language", as they are a part of the XXI century literacy skills.

The TangIn Project aims to deliver educational resources and guidance materials for educators to promote and support the effective use of tangible programming concepts in daily classrooms while teaching STEM-based subjects. These resources enable educators to introduce tangible programming concepts and STEM-based subjects to young students in an entertaining, engaging, pedagogically sound and inclusive way. At the same time educators promote classrooms as inclusive environments through the development of the students' digital, problem -solving and reasoning skills.

The consortium brings together researchers, universities, NGOs and schools to engage in a process of co-development of products, which includes:

- A comprehensive report on using programming concepts to stimulate learning of STEM subjects at primary school levels, providing guidance on how tangible programming (TP) concepts can be used in classrooms to foster students' motivation for STEM-based subjects and inclusion.
- A report on the investigations to present an overview of the methodological approaches used at schools, the rationale behind using TP concepts within education, the most important STEM topics included in the primary school curricula and guidelines for the development of educational resources using TP concepts.

The TangIn toolbox of resources composed of a set of activities to be implemented in daily classes including the teachers' guide manual. The toolbox is a simple web platform, which presents basic concepts of TP that everyone can use. The objective is to stimulate students' curiosity and engagement, to host the educational resources produced based on TP concepts and tools; and opportunities for educators to share ideas and experiences. The teachers' guide manual supports teachers in implementing the educational activities and helps them to assess their impact on students' learning and motivation.

The TangIn Teachers Training Package is used to train educators on how to use Tangible Programming in classes and how to further develop new activities or lessons in different subjects. The Training Package consists of a manual for participants and supporting materials enabling further training of school educators on the use of Tangible Programming concepts and tools within education and on the use of the TangIn toolbox of resources. The package is designed in a way that can be used at two different levels: as a continuous training course for teachers; and as material for higher education curricula for students enrolled in pedagogical courses.

A guide addressing management bodies of schools, policy makers and research communities proposing tips, recommendations, and roadmaps for the adoption of Tangible Programming concepts and tools in educational contexts, enabling new schools to join the innovative movement towards the development of XXI century skills.

Delivering the outcomes of the project the consortium promotes several events, including

- A workshop for educators from partner countries;
- Local peer-training activities;
- Pilot projects at schools with the participation of around 800 students;
- 4 multiplier events at schools; and
- A final conference for the research and educational communities.

CONCLUSION

In concluding the project, the consortium reached the following key-impacts:

1. Schools and teachers better prepared to respond to XXI Century skills demand by improving students' STEM, digital, problem solving and reasoning competencies and skills.
2. More motivated and engaged students through an increased feeling of belonging, increased opportunities for peer activities and increased motivation to learn STEM and digital topics.
3. Cooperation between research communities and educators for the development of innovative approaches for teaching as well as innovative educational resources leading to more inclusive classroom environments.
4. Maximizing the ability of educators and partners to answer the challenges they are facing in terms of students' motivation in acquiring new knowledge and skills for better placement in the labour market.

Publication Guidelines for the

International Journal of Vocational Education and Training

The *International Journal of Vocational Education and Training* reflects regional contributions and is international in scope. Its purposes are to provide a forum for the discussion of vocational education and training issues and practices; to assist in the dissemination of information on research and practice; and to strengthen the lines of communication among individual researchers and practitioners, institutions, and organizations. In addition, it provides a platform for individual views on relevant issues.

The Editorial Board passed a resolution requiring membership in IVETA in order to publish in the Journal, with effect from Volume 14.2. The Journal publishes feature articles on research, theory, and practice broadly related to international vocational education and training. The largest section of the Journal is devoted to empirical research articles. General articles and research manuscripts submitted for publication should be between 1,200 and 5,000 words in length and should adhere to rules in the most recent edition of the Publication Manual of the American Psychological Association (APA) with the exception of placing tables in-column in the text where you prefer them to appear. Articles should deal with some relevant aspect of educational opportunity such as educational research, evaluation, instruction, teaching methods, policy making, or theoretical discourses related to education and training.

In addition, the Journal solicits book, test, and computer hard/software reviews (500-700 words) and research in brief manuscripts (800-1,200 words) with similar publication goals. Authors interested in submitting a manuscript are required to follow the APA format as noted above.

Style and Submission Requirements

Copies. Submit electronic copies to: https://iveta.global/submit-your-abstracts-and-articles/ Or submit manuscripts directly to the editor via email at lsteinke@iveta.global

Style. Adhere to the most recent APA edition to format your manuscript. Please remember the exception: Place any tables or figures in-column where they should appear. Any paper that does not otherwise follow APA style will not be considered. Make certain that documentation (reference) format rules are double-checked. In addition, avoid footnotes, and do not include your name or affiliation on any page after the title page. No more than 5% of a paper's text should be direct quotations. Insert only one space after punctuation at the end of sentences.

Tables and Figures. Tables and figures should relate directly to the content of the manuscript and should not repeat information given in the text. Tables and figures can be produced in either color or black and white. Figures should be provided on high-quality, glossy white paper and should fit on one page. Tables should not exceed one page, and there should be no more than three tables per article. Also, do not place table or figure titles inside the table or figure.

General Articles and Research Manuscripts. General articles and research manuscripts must be between 1,200 and 5,000 words long, or not more than 25 typed pages (double-spaced). Authors should keep tables and figures to a minimum and include them in-column at the appropriate point(s) of insertion. Emphasis is placed particularly upon manuscripts that are research-oriented.

Cover Page and Title. Authors must include a removable cover page that is attached to each manuscript. This cover page should include the title of the manuscript and the name, address, phone number, email address, and institutional affiliation of each author. The title should be no more than 12 words.

Abstract. An abstract describing the manuscript should be included on a separate sheet. The abstract must be less than 120 words. Please follow APA guidelines when writing the abstract.

Book Reviews. Book reviews should be between 500 and 750 words in length and contain the following information: complete bibliographic entry, including cost (hard- and softcover, if available); the thesis of the book; a brief description of the argument (main ideas); sample passages quoted and/or commentary on writing style; shortcomings and strengths; intended audience (whom the book will most benefit in the international education and training community); your opinion of the book; and what you think the book contributes to the international vocational education and training community.

Test Reviews. Test reviews should be between 500 and 750 words in length and contain the following information: complete bibliographic entry, including cost; the main purpose(s) of the test; a brief description of the administration and time; shortcomings and strengths; intended audience (whom will the test most benefit in the international education and training community); your opinion of the test (citing similar tests and the pros and cons relative to those tests); and what you think the test contributes to the international vocational education and training community.

Review Process. Once your manuscript has been received, it will be checked for conformity to style and Journal requirements, then forwarded to up to three peer review readers who will read your manuscript and make recommendations as to whether to accept or reject it for publication. Unless the manuscript is inappropriate for review due to length and/or topic, manuscripts submitted to the *International Journal of Vocational Education and Training* are anonymously reviewed by a peer review reader group as noted above. You will receive a publication decision within a reasonable amount of time (normally 3 to 5 months). Do not submit manuscripts concurrently under consideration by another publication or manuscripts that were previously published. Indicate a statement on the cover page is the manuscript is being reviewed or has been submitted for publication elsewhere.

Call For Papers

The International Journal of Vocational Education and Training (*IJVET*) accepts original manuscripts from scholars and practitioners worldwide focusing on Technical Vocational Education and Training (TVET). Authors wishing to have articles reviewed and published in the next volumes are encouraged to submit their manuscripts to: https://iveta.global/submit-your-abstracts-and-articles/, or submit directly to the editor at lsteinke@iveta.global

Topic Areas of Interest

In general, *IJVET* accepts articles on all general aspects of TVET, however, the journal welcomes manuscripts that meet the general criteria of significance and scientific excellence, and will publish: original articles in basic and applied research, case studies and critical reviews, surveys, opinions, commentaries and essays including, but not limited to the following topic areas:

- Information and communication technologies and TVET
- Comparative studies in TVET
- Financing TVET
- Implementation and evaluation of TVET programs or education
- New and emerging practices in TVET
- TVET as continuing or lifelong Learning
- Transfer of Training
- Formal, Informal and Non-formal TVET
- TVET policies at local, national, and international levels
- Occupational competencies and TVET
- National Vocational Qualifications and Occupational Standards
- Occupational Certification, Licensing, Accreditation, and Micro Credentialing
- Cost Effectiveness and Quality Based TVET
- Instructional methods and TVET

For guidelines on submitting manuscripts, please visit:

https://iveta.global/publications/the-iveta-journal-ijvet/

Editorial Board Members

IJVET is also seeking members willing to serve as reviewers for the journal. If you are interested in joining our team of reviewers please, send your resume to lsteinke@iveta.global