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# **SOCIETY AND SUSTAINABLE TECHNICAL VOCATIONAL EDUCATION CURRICULUM: THE NEXUS.**

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**By**

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## **Abstract**

*Society and sustainable technical education curriculum: The nexus was a survey carried out in Benue State of Nigeria. 125 technical and vocational teachers out of total population of five hundred and twenty-five (525) in fourteen technical colleges in Benue State were sampled, using simple random sampling technique. Data were collected through a well structured questionnaire tagged society and Sustainable Technical Vocational Education Curriculum (SSTVEC). Test-re-test reliability method was adopted to determine the internal consistency of the questionnaire items and coefficient of 0.82 was obtained, using Kuder Richardson Formula (KR-1). Mean and standard deviation were used in analyzing the data. The result of the study showed that the modification of TVET curriculum, considering needs of society and the learners and also the dynamic world is of paramount important for eradication of poverty, hunger and to attain national development.*

As the world emerges from the current economic downturn, the ability of a society to increase the skills of its workforce is of significant importance in attaining national development. It is no exaggeration that curriculum plays a key role in the training and retraining of competent skilled workforce who are to translate national goals of education into practical activities. This requires that any serious attempt to improve technical education quality must begin with the issues of curriculum innovation, implementation and evaluation. A curriculum is an embodiment of all the knowledge, skills and attitudes which a nation, through her schools, imparts to her citizens. It embraces all the knowledge needed to be acquired for an individual to be certified as competent in a particular field. The validity of any educational system is gained by the relevance of her curriculum (Dike and Eze, 2009). Any society with a weak curriculum is actually incapacitated. Sustainable technical curriculum, therefore is the continuous identification, selection, and arrangement of learning opportunities and the creation of curriculum materials with the appropriate teaching strategy which fits the challenging conditions of stated goals and objectives.

Sustainability can be seen as the ability to sustain something, a means of configuring civilization and human activity so that society, its members and its economies are able to meet their needs and express their greatest potential in the present, while preserving biodiversity and natural ecosystems, planning and acting for the ability to maintain these ideals for future generations. Sustainable development is the development that meets the need of the present without compromising the ability of the way of harnessing resources that have not been explored for the benefit of humanity (Okpara, 2012). The major challenge facing the global world is how to find ways of sustaining living and working as new industries and employment opportunities emerge such as automation in industry and ICT.

According to UNESCO, UNECOV (2008) these new roles demand a change in TVET curriculum that will integrate sustainable development into TVET in the potential strategies: to include: (i) sustainable development concepts in all courses for everyone (ii) to enhance focus on sustainable development concepts in occupationally relevant areas e.g. auto repairs, fabrication, ICTs, etc (iii) to ensure that new jobs will become available in sustainable industries.

Wikipedia (2014) lamented that a society running on a huge resource deficit is not sustainable. To build a sustainable society, a delicate balance between current needs and future needs has to be reached. However, with the society's capability to utilize the reserved resources, human beings have a choice to make. They could continue to use up all the reserved resources and let their children suffer the consequence of resource starvation. A sustainable society is simply one that can avoid a devastating blow so that human society can continue its long journey to perfection. It is a known fact that technical education is an instrument for national development. There are evidences to attest to the above statement as can be seen from automobile

technology, metal work technology, building technology, agriculture, especially in improved quality and quantity of food production. This may have informed the saying of Nwokolo (2012) that technical education and training is a means of survival. The author said that reinvigorating TVET for survival involves revision and reappointment of priorities of investment, paying maximum attention to areas known to promote early economic growth, instilling, budgetary discipline and fighting corruptions.

According to UNESCO and ILO (2002), TVET is referred to as those aspects of 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 related to occupations, in various sectors of economic and social life. It is a programme concerned with the design, manufacture, sale, installation and serving of a wide variety of products, requiring more manipulative skills and less technical knowledge. TVET is skill-oriented training. It is education for practical work and specifically for employment, job creation and self-reliance. Technical skilled work-force of course, is the bedrock of genuine high level productivity in all sectors of the economy. TVET helps students acquire competencies they need to join the workforce.

With the changing global economy coupled with rapid technological and scientific advancement and the realization that socio-economic growth and development is linked to technological revolution, TVET has become important for self employment and national transformation (Nwokolo, 2012). One of the basic aims of curriculum is that of improving the quality of technical education and training in Nigeria, through integration of theory and practicals by offering student-based and activity-oriented curriculum. Curriculum process is a deliberate, rational and logical way of identifying and structuring different curriculum elements, determining their relevance and interaction. It is also a means of analyzing alternatives and projecting possibilities of the elements throughout a period with available resources. Functional technical and vocational education and training curriculum consists of formulative guided learning experiences and intended outcomes through systematic construction of technical and vocational knowledge from theory to practical, for the learner's continuous and willful growth in personal social competence under the auspices of the technical teacher. The vital role of TVET in the production of skilled and competent workforce for economic, industrial and social development cannot be achieved if a functional, effective and dynamic curriculum is not maintained, especially with changing societal needs for technological advancement. Special efforts should be undertaken to inculcate competitiveness in technically qualified human resources to make it globally acceptable. Such type of education will improve the quality of life of the economically weaker section of society. It is against this background that this paper is set to examine the technical vocational education and training curriculum and national development.

### **Purpose of the Study**

The main purpose of this study is to examine African curriculum and TVET for national development. Specifically, the study seeks to determine

1. The challenges facing the successful implementation of TVET curriculum in technical colleges.
2. Ways by which curriculum planners and government address unemployment of vocational technical education graduates in the society.
3. The availability of teachers and infrastructural facilities in technical colleges for the successful implementation of TVET curriculum.
4. The counselling skills counselors will utilize in the modification of curriculum.
5. The areas of curriculum modification teachers should be trained for effective use of the TVET curriculum.

### **Research Questions**

1. What are the challenges facing the successful implementation of TVET curriculum in technical colleges?
2. In what ways should curriculum planners and government address unemployment of vocational technical education graduates in the society?
3. To what level are the availability of teachers and infrastructural facilities in technical colleges for the successful implementation of TVET curriculum?
4. What are the counselling skills the professional counsellor will utilize in the modification of the TVET curriculum?
5. What are the areas of curriculum modification teachers should be trained on to achieve the effective implementation of TVET curriculum?

### **Methodology**

The study adopted a survey research design in carrying out the investigation. The population for the study consisted of five hundred and twenty-five (525) technical and vocational teachers, in all the technical colleges in Benue State. A sample of one hundred and twenty-five (125) were selected from the population through simple random sampling technique. A structured questionnaire with 30 items altogether in five research questions guided the study using four point Scale of Strongly Agree, Agree, Disagree and Strongly Disagree.

The research instrument was validated through consultation with experts in vocational and technical education. The correction and suggestions of the experts led to the modification of some items in the questionnaire. The reliability of the instrument was determined using the test-re-test method. The reliability coefficient of 0.82 was obtained using Kuder Richardson formula (KR -1), the value suggests that the instruments were reliable. The data collected were analysed using Arithmetic mean (X). The decision point was put at 2.50. This therefore implies that a mean rating of less than 2.50 is “disagree”, while a mean rating equal to or more than 2.50 is “agree”.

**Results**

The results of the analyses are presented below in accordance with the research questions and hypothesis.

**Research Question 1**

What are the challenges facing successful implementation of TVET curriculum in technical colleges?

**Table 1**

Responses of the challenges facing successful implementation of TVET curriculum in technical colleges

S/N	Item Statement	$\bar{X}$	SD	RMK
1.	Acute shortage of vocational and technical personnel	2.55	0.87	Agree
2.	Lack of adequate training facilities and equipment	2.78	0.91	Agree
3.	Inadequate TVET policies	2.86	0.94	Agree
4.	TVET curriculum is very expensive to implement	2.75	0.89	Agree
5.	TVET curriculum is too complex and ambiguous to implement	2.99	0.98	Agree
	<b>Grand Mean</b>	<b>2.79</b>	<b>0.92</b>	<b>Agree</b>

The data on table 1 above shows the responses on the challenges facing successful implementation of TVET curriculum in Technical Colleges. The mean of five items listed have mean ranging from 2.55 to 2.99 which indicates that the above items are among the challenges facing the successful implementation of TVET curriculum in technical colleges. The standard deviation which ranges from 0.87 to 0.98 and grand mean also indicate that the opinions of the respondents are synonymous.

**Research Question 2:**In what way should curriculum planners and government address the issue of unemployment among TVET graduates in the society?

**Table 2:** t-test analysis and probability level of respondents on the way curriculum planners and government should address the issue of unemployment.

S/N	Item Statements	$\bar{X}$	SD	RMK
1.	Recognize the crucial role of TVET in poverty eradication, job creation and sustainable development.	3.23	0.65	Agree
2.	Technical teachers receiving professional training to equip them with professional updates.	2.65	0.58	Agree
3.	Take advantage of career opportunities offered by TVET and become prepared for further studies in TVET	2.76	0.59	Agree
4.	Identify areas of the curriculum where teachers need improvement for effective teaching of TVET.	2.50	0.55	Agree
5.	Relevant infrastructure brings about high grades of the standard of the product.	2.58	0.57	Agree
<b>Grand Mean</b>		<b>2.74</b>	<b>0.59</b>	<b>Agree</b>

The analysis in table 2 revealed that government and policy planners should recognize the roles of TVET in poverty eradication, job creation and sustainable development, equipping teachers with professional updates, taking advantages of career opportunities offered by TVET to prepare for further studies, identify areas of the curriculum where teachers need improvement, among others are the ways government and policy planners can address the issue of unemployment among TVET graduates in the society with a mean range of 2.50 to 3.23 and responses were homogenous with standard deviation of 0.55 to 0.59 and grand mean of 2.74 with corresponding standard deviation of 0.59.

**Research Question 3:** To what level are the availability of teachers and infrastructural facilities in technical colleges for the successful implementation of TVET curriculum?

**Table 3:** Shows t-test analysis of respondents on the availability of teachers and infrastructural facilities for implementation of TVET curriculum.

S/N	Item Statements	$\bar{X}$	SD	RMS
1.	Consumable materials	2.36	0.91	Inadequate
2.	Equipment machines and tools	2.28	0.93	Inadequate
3.	Experienced professional teachers and personnel	2.44	0.95	Inadequate

4.	Funds for equipping the TVET workshops or laboratories	2.38	0.88	Inadequate
5.	Provision and maintenance of internet facilities, e-library and e-learning	2.39	0.94	Inadequate
	<b>Grand Mean</b>	<b>2.37</b>	<b>0.92</b>	<b>Inadequate</b>

Table 3 presents respondents responses on the level of availability of teachers and infrastructural facilities in technical colleges for the successful implementation of TVET curriculum. A close look at the mean and standard deviation responses of each item posed to determine whether there are adequate availability of teachers and infrastructural facilities in technical colleges for the successful implementation of TVET curriculum, shows that respondents disagreed with all the items as it was revealed in their responses above. Those items had their mean scores range from 2.28 to 2.44 with the corresponding standard deviation and the grand mean of 2.37.

**Research Question 4:** What are the counseling skills professional counselors will utilize in the modification of TVET curriculum?

**Table 4:** Mean scores and standard deviation of Respondents on the counseling skills to utilize by counselors in the modification of TVET curriculum.

S/N	Item Statements	$\bar{X}$	SD	RMS
1.	Enlightenment campaigns on internet literacy by the school counselors	4.10	0.69	Agree
2.	Counseling on negative attitudes towards TVET programme	4.22	0.63	Agree
3.	Non-technical-vocational students be exposed to knowledge and skills needed to function in TVET related occupations	4.20	0.62	Agree
4.	Counseling on the issues of quality and relevance of training for wealth creation,	4.11	0.64	Agree
5.	Counseling on skill development programmes such as welding, carpentry, fish pond, etc.	4.01	0.73	Agree
	<b>Grand Mean</b>	<b>4.13</b>	<b>0.66</b>	<b>Agree</b>

Responses from table 4 show that respondents agreed with the counseling skills identified to be utilized by counselors in the modification of TVET curriculum, counseling individuals on the importance of computer literacy, negative attitudes of people towards TVET programme; non-technical students being exposed to knowledge and skills needed to function in TVET related occupations, among others. Those items had their mean scores ranging from 4.01 to 4.22, with the corresponding standard

deviation that range from 0.62 to 0.73. The grand mean is also within the acceptable range of 4.13 which shows that their responses are not far from each other.

### Research Question 5

What are the areas of curriculum modification teachers should be trained, for the effective implementation of TVET curriculum?

**Table 5:** Mean and standard deviation of respondents on the areas of curriculum modification teachers should be trained, for the effective implementation of TVET curriculum

S/N	Item Statements	$\bar{X}$	SD	RMS
1.	Setting opportunities to interact with the TVET teachers and mentors at conference and workshops to be better equipped and be proud of their jobs and contributions.	3.27	0.25	Agree
2.	A successful adaptation of the TVET curriculum will address the need of different categories of learners and also make the programme a worth-while venture.	3.30	0.22	Agree
3.	Training and retraining of TVET teachers to partake in the principles and practices of TVET must be put in place prior to their utilization.	3.17	0.21	Agree
4.	Special committees at community level to be set up by the state in collaboration with local government to brainstorm ideas for establishing priority, assigning responsibilities for action and reviewing progress towards defined goals.	3.42	0.24	Agree
5.	TVET curriculum and instruction will be used as a base for accommodations and modifications to be able to meet educational goals and objectives.	3.32	0.22	Agree
	<b>Grand Mean</b>	<b>3.30</b>	<b>0.23</b>	<b>Agree</b>

Table 5 showed the results of data analysis collected on the areas of curriculum modification teachers should be trained or for effective implementation of TVET curriculum. The table showed that all the items have their mean scores ranging from 3.21 to 3.42 which indicates that all the respondents agreed on the areas listed above



and the response were homogenous with a standard deviation of 0.21 to 0.25 and also with the grand mean of 3.30 and corresponding grand standard deviation of 0.23.

## **Discussion**

Eradicating hunger and poverty in the society requires an understanding of the ways in which these two injustices and society interconnect with the curriculum development and its implementation. Technical vocational education and training (TVET) curriculum in Nigeria appears weak and not well organized and implemented, yet it could help provide people with skills that will make them productive entrepreneurs and involved in creative and innovative ideas that will enhance societal economy. TVET programme in Nigerian schools would have been more than what it is today, but due to some challenges facing it, it has not attained the height it desires as compared to its counterpart in other countries of the world. Among the challenges are; Acute shortage of vocational and technical personnel; lack of adequate training facilities and equipment, TVET curriculum being very expensive, too complex and ambiguous to implement.

The study revealed how curriculum planners and government should address the issue of unemployment, equipping technical teachers with professional updates, and areas of curriculum where teachers need improvement. This study is in line with the study conducted by Basiru (2013) who opined that inadequate provision of workshop tools and equipment and other training facilities hinder the achievement of TVET goals and objectives. This was further supported by Olaitan (1998( cited in Famiwole and Okeke (2013) who noted that the teachers role in guiding and encouraging learners to complement classroom instructions with skill development through practical's and on the job experience is recognized as very important.

The study also found out counseling skills the professional counselors should utilize in the modification of TVET curriculum, to expose non-technical students to knowledge and skills needed to function in TVET related occupations. The findings also revealed that counseling on skill development programmes such as fabrication and welding, carpentry, fish pond management among others are some of the curriculum modifications that teachers should be trained on for effective implementation of TVET curriculum. According to Ukonze (2011) curriculum is occasionally reviewed by curriculum planners to meet up with the need of the society, and in this case, the curriculum tends to delete the irrelevant learning experience of an existing one and substitute it with available improved ones or novel ones that have not been in existence that might be of benefit to the society taking into consideration the required resources for its success. The findings were in consonance with the opinion of Onyiliofor (2011) that everything that embodies curriculum must undergo modification, therefore, both the teachers, educators and professional counselors, handling the special needs of students must be highly specialized and competent. Some of the skills possessed by professional counselors bring out the skills and add more skills to the already acquired

skills which will be effective by packaged in training students. The results of the study also are in conformity with the assertion of Odebunmi (1992) who stated that vocational skills, career, placement and development/increased skills are utilized by professional counselors in the modification of curriculum in order to meet the goals and objectives of TVET.

### **Conclusion**

The study revealed that the role of TVET in national development can never be over emphasized and curriculum plays a very important role in the achievement of aims and objectives of TVET, therefore the modification of TVET curriculum, considering the needs of society and the learners and also the dynamic world is of paramount importance for the eradication of poverty, hunger and to attain national development.

### **Recommendations**

In the midst of the above scenario, it is recommended that:

1. All TVET institutions should re-orient their curriculum to meet the challenges of modern society, for self reliance and entrepreneurial skill development.
2. Government should focus on the provision of facilities, equipment and machines for the propagation of TVET programme.
3. Technical teachers should be trained in both pedagogy and knowledge of TVET curriculum in the form of organized workshops, seminar and short duration courses.
4. Government should re-structure the TVET curriculum so that the materials for the implementation could be easily accessible within the environment. This system of approach will lead to improvement in the indigenous technology and with time, greater advancement will be made on the present indigenous technology.
5. The curriculum planners involved in planning the TVET curriculum programme should include more strategic activities in the technical education that will boost the performance of the students in the software development.

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