### TVET Educators Competency and the Utilization of Modern Teaching Methods and Facilities in Colleges of Education in Nigeria

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#### Abstract

This paper examined TVET educator's competency in TVET in Colleges of Education (COE) for lifelong learning in South-South geopolitical zone in Nigeria. Three research questions and three null hypotheses were formulated to guide the study. A total of 146 TVET educators drawn from six Colleges of Education in South-South Nigeria constituted the sample of the study. A 15 item questionnaire of 4 point rating scale was used together data. Face validity of the instrument was assessed by three research experts, while the reliability of the instrument was ascertained using Cronbach Alpha statistics which yielded a reliability coefficient of 0.79. Mean and standard deviation were used to answer the research questions while the hypotheses were tested at 0.05 level of significance using independent t-test. The findings of the study revealed that TVET educators have low competency in the utilization of modern teaching facilities such as google classroom, flipped classroom, desktop computer, interactive whiteboard and logitech. The finding also revealed very low competency in the utilization of science-360-video, class dojo, canva, adobe spark video and prezi teaching method. Furthermore the findings revealed that TVET educators have very low competency in the utilization of diagnostic assessment, criterion reference test, ipsative assessment, norrn-referenced assessment and high stake assessment method. The paper therefore recommended among others that government at all levels and collaboration with private institutions should organize workshop, seminar and conferences to train TVET educators on the utilization of modern teaching facilities, method and assessment techniques.

**Keyword:**TVET Educators, Colleges of Education, Teaching Methods, Facilities, Assessment, Nigeria.

#### Introduction

Education is a process of enabling individuals to live and contribute as a member of a society. In the views of lgbinedion and Ojeaga (2012) and Dilshad (2010), education is a veritable means of progress for nations and individuals. Similarly Okebukola (2012), opined that education is a process of updating the knowledge and skills of the individual that will be useful to himself or herself and to the community.

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The numbers of TVET institutions has greatly increased in the developing countries and has continued to thrive in many societies (Aigbepue, 2011, Grame, 2010, Aliwa, 2013). TVET according to Ayonimike, Okwelle and Okeke (2013) is widely recognized as a vital driving force for the socioeconomic growth and technological advancement of any nation. This is because one of the most important features of TVET is its orientation towards world of work and the emphasis of its curriculum on the acquisition of employable skills.

Quality TVET is essential in developing countries to sustain the nation's populace where quality of life is still very poor. The United Nations Educational Scientific and Cultural Organization (UNESCO, 2010) noted that revitalizing TVET is among the ways to improve economic opportunities for the nation's populace. The TVET skills that are needed for national development are fast disappearing. According to Aina (2009) and Lawal (2014), the German government's today focus on rebuilding their manpower starting from the proportion of skilled technicians and workers to those with university degrees which is about 4 to 1. In Nigeria, practically every student seeks a university degree, even if it means not acquiring any skills or any job prospects (Dike, 2009).

The Federal Government of Nigeria (FGN, 2014) Conceptualized Technical Vocational Education and Training (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 acquiring of practical skills, attitudes, understanding and knowledge related to occupations in various sectors of economic and social life.

In preparing TVET educators for the world of work, the Federal Government of Nigeria approved Colleges of Education and Universities to undertake pre-service training for TVET educators at Lower to Upper Basic Education (FGN, 2014). As a result of this FGN (2014) listed Basic Technology, business Studies, Cultural and Creative Arts, Home Economics and Agricultural Science as a prevocational subjects at the Upper Basic Education level with the introduction of information and communication technology (ICT) to enhance effective application of modern digital ICT facilities and methods in teaching and learning.

The present educational system in Nigeria with its emphasis on TVET if firmly rooted in its implementation can be perceived as the most potent instrument that can be used to bring about desirable change or development of the a viable educational system in this ever growing world (Obanya, 2007). In the view of Ezeobata (2017), educators are the prime movers of any worthwhile educational system. The impart of educators in the attainment of TVET objectives for lifelong learning cannot be overemphasized. This by implication means that the quality of any nation's educational system depends on the competency and quality of her education. Fanegan (2013) described competent educators as a person who communicates knowledge, skill and attitude to students in a school. In the view of Ibelegbu (2013), a competent educator is a facilitator of learning who helps students to realize their full potentials economically, emotionally and socially in career selection and transition. Similarly Encarta Dictionary (2009) defines competence as ability to do something well, measured against a standard, especially ability acquired through experience or training. While Baba, Victor-Igwe and Baba (2015) stated that competency is an essential knowledge and skills obtainable in a profession and those which the professionals in the field must possess and be able to demonstrate at optimal level of acquisition and functioning.

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Sheila and Simeon (2015) and Igberaharha (2018) opined that apart from teachers competence, assessment allow educators to compare performance result across multiple classrooms, courses, schools and learning experience using different teaching methods. Oyebade, Oladipo and Adetoro (2012) also stated that the quality of education may be considered on the basis of how competent and efficient the educators are, how adequate and useable the facilities and materials needed for effective teaching and learning are, how prepared the TVET trainees are to tackle the challenges of life and for solving the social problems.

Teaching facilities and methodologies are materials and methods that assist teachers in delivering of their lectures and make their lesson explicit to the learners. Teaching facilities enable the teachers to be properly organized in impart of the actual course content to the students. According to Isyaku (2006) teaching facilities develop students ideas through the creation of events and objectives which will improve the students continuity of thought. Grabe and Grabe (2007) expressed the view that teaching facilities and methods are central in developing students skills and competencies, motivation and knowledge through qualitative assessment.

According to Grabe and Grabe (2007), Ibelegbu (2013) and Uwemeiya (2014) teachers need facilities to enhance teachers competence on the job. Consequently, Ayonmike Ekwelle and Okeke (2013), Ibelegbu (2013) and Uwemeiya (2014) stated that tertiary institutions lack teachers competency in the utilization of modern teaching facilities such as interactive whiteboard, computers, internet and modern ICT facilities and mechanism.

Similarly Bennel (2009), Sarfo (2011) and Igberaharha (2018) maintained that the utilization of appropriate teaching method have potential for enhancing student's learning. Amasi and Giami (2016) stressed that the primary purpose of teaching and learning and learning is to bring about permanent changes in behaviour through active participation and critical thinking and that this cannot take place without the use of proper teaching methods and assessment. In the views of Sarfo (2011), Baba, Victor-Igme and Baba (2015), Amasi and Giami (2016), tertiary institution lecturers only use lecture, field trip, excursion, individual project, demonstration, practicum, laboratory work, simulation, group/panel, and team teaching method, but neglect the use of modern digital teaching methods like classroom dojo and canva.

Also according to Igberaharha (2018) Rusalam, Munawar and Hardikusumah (2018), quality education can be assessed internally using diagnostic, selective-response, norm-referenced test, formative and summative assessment. Sheila and Simeon (2015) and Igberaharha (2018) noted that formative and summative assessment is used for assessing student's performance in Nigeria tertiary institutions due to lack of competency in using norm-referenced and diagnostic ICT facilities.

The researchers are in agreement with the various opinions expressed on the potentials of TVET in equipping the learners with skills necessary for self-reliance. However, the extent to which TVET educators are competent in the utilization of modern teaching facilities, methodologies and assessment methods have not been achieved. This situation calls for assessment of TVET educators competencies and the utilization of modern facilities, methodologies and assessment techniques in colleges of Education in South-South, Nigeria with a view to recommending competency improvement in order to achieve TVET objectives.

#### **Statement of the Problem**

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Colleges of Education like other TVET institutions are currently faced with a myriad of challenges in their endeavor to train high quality educators as a result of lack of competency in the utilization of modern teaching facilities, teaching methods and assessment method. Employment of incompetent male and female educators are challenging issues in Nigeria (Yahaya, 2019). Due to lack of educator's competency and availability of facilities in unemployment rate of educators is now a menace and constitutes a real danger and a treat to Nigeria's socio-economic growth (Lawal, 2014). In the view of Mok (2005) and Olakotan (2015), lack of competence educators aggravate graduate's negative behavior in the society as a result of lack of employable skills which leads to most anti-social acts including thuggery, arm robbery, militancy, restiveness, ethnic political clashes and other social vices in Nigeria were traced to the high rate of unemployment. Unfortunately, most research studies on TVET has not been able to address this menace. It is in recognition of the desire to trace the root cause of this menace that the paper sorts to determine the competency of TVET educators for lifelong learning in South-South Nigeria with the aim of recommending solutions to improve teacher's competencies in the utilization of modern teaching facilities, method and assessment.

#### **Purpose of the Study**

The purpose of the study was to determine TVET educator's competency and utilization of facilities for lifelong learning in Colleges of Education in South-South, Nigeria. The study specifically aimed to determine.

- 1. Male and female TVET educator's competence in the utilization of modern facilities in College of Education in South-South, Nigeria.
- 2. Male and female TVET educators competence in the utilization of modern teaching methods in College of Education in South-South, Nigeria.
- 3. Male and female TVET educators competence in the utilization of modern assessment methods in College of Education in South-South, Nigeria.

#### **Research Questions**

Three research questions guided the study:

- 1. What are Male and female TVET educators competences in the utilization of modern facilities in College of Education in South-South, Nigeria?
- 2. What are Male and female TVET educators competences in the utilization of modern teaching methods in College of Education in South-South, Nigeria?
- 3. What are Male and female TVET educators competences in the utilization of modern assessment methods in College of Education in South-South, Nigeria?

#### **Null Hypotheses**

**H**<sub>O1</sub>: There is no significant difference between the mean responses of male and female TVET educators on competence in the utilization of modern facilities in College of Education in South-South, Nigeria.

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**H**<sub>O2</sub>: There is no significant difference between the mean responses of male and female TVET educators on competence in the utilization of modern teaching methods in College of Education in South-South, Nigeria.

**H**<sub>O3</sub>: There is no significant difference between the mean responses of male and female TVET educators on competence in the utilization of modern assessment methods in College of Education in South-South, Nigeria.

#### Methodology

The study was carried out in Colleges of Education in South-South Nigeria. The choice of this area was to contribute to the improvement TVET in College of Education and the production of quality graduates. The study employed survey research design. Nworgu (2015) noted that it is a design approach which aims at collecting data and describing them in a systematic manner, the characteristics, features or facts about a given population. This design was used as a means of effecting clearly and properly understanding of the research findings, since it sought to ascertain the competencies in the utilization of modern teaching facilities, methods and assessment methods in College of Education in South-South, Nigeria.

The target population of this study was 146 technical vocational education respondents drawn from six Colleges of Education in South-South, Nigeria. The choice of the respondents was based on the fact that they are concerned with the training of educators. Thus, they are knowledgeable about the variables under study and could supply useful information on the research instrument. Purposive sampling technique was used for the study. The researchers adopted purposive sampling technique since the sample size was manageable. This implies that the total number of 146technical vocational education respondents from six Colleges of Education in South-South, Nigeria was used for the study.

The instrument used for data collection was a structured questionnaire titled TVET educators competency and the utilization of facilities in Colleges of Education (COE) for Lifelong Learning. The questionnaire has three parts; Part A contains the demographic data of the respondents. Part B contains five items on mean rating of respondents on the utilization of modern teaching facilities in COE in TVET in South-South Nigeria. Part C contains five items on mean rating of respondents on the utilization of teaching methods in TVET in COE in South-South Nigeria. Part D contains five items on mean rating of respondents on the utilization of modern assessment methods in TVET in COE in Nigeria. A four-point rating scale of Very Highly Competent (VHC), Highly Competent (HC), Lowly Competent (LC) and Very Lowly Competent (VLC) was provided for the respondents to make their responses in all the clusters. The cut-off points for the interpretation of the mean of the respondents' opinion were: Very Highly Competent (3.50 - 4.00); Highly Competent (2.50 - 3.49); Lowly Competent (1.50 - 2.49) and Very Lowly Competent (1.00 - 1.49).

The face validity of the instrument was ascertained by giving the draft copies of the instrument to three experts in Industrial Technology Education in the Faculty of Education, University of Uyo, Akwa Ibom State. Corrections and possible suggestions were offered by the experts after adequate scrutiny of each item. This was to ensure that the instrument measured the intended attributes. In order to ensure the reliability of the instrument, the researchers

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administered the questionnaire to 20 respondents who were not part of the study but possess the same qualities of those used for the study. Cronbach Alpha technique was used to analyze the data collected which yielded a reliability coefficient of 0.79. This shows the instrument was reliable for the study. The researchers administered the instrument directly to the respondents in the Colleges of Education with the help of three assistants who were instructed on what is required. The instrument was collected immediately after completion.

The research data collected were answered using mean while independent t-test was used to test all the null hypotheses at .05 level of significance. When the calculated t-value is greater than the tabulated value, null hypothesis is rejected, when the calculated t-value is less than the tabulated value null hypotheses is upheld.

#### **Presentation of Data Analysis and Result**

**Research Questions 1:** What are Male and female TVET educators competences in the utilization of modern facilities in College of Education in South-South, Nigeria?

**Table 1:** Mean responses of male and female TVET educators competences in the utilization of modern teaching facilities in College of Education in South-South, Nigeria.

		l	Male		nale	
S/N	<b>Modern Facilities Utilization</b>	$\overline{X}$	SD	$\overline{X}$	SD	Decision
1.	Competency in the utilization of google classroom	1.58	0.84	2.26	0.71	LC
2.	Competency in the utilization of flipped classroom	2.09	0.89	2.42	0.86	LC
3.	Competency in the utilization of Desktop/Laptop computer	2.36	0.77	2.14	0.81	LC
4.	Competency in the utilization of interactive whiteboard	2.43	0.82	2.37	0.74	LC
5.	Competency in the utilization of logitech	2.18	0.73	2.36	0.69	LC
	Cluster mean	2.13	0.81	2.31	0.76	LC

*Note: LC = Low Competent* 

The data presented on Table 1 showed that the cluster mean responses for male and female TVET educators is 2.13 and 2.31 with corresponding standard deviation of 0.81 and 0.76 respectively. All the mean rating are below the cut-off point of 2.50. This means that the TVET educators have low competency in the utilization of google classroom, flipped classroom, desktop computer, interactive whiteboard and Logitech modern teaching facilities.

**Research Questions 2:** What are male and female TVET educators competences in the utilization of modern teaching methods in College of Education in South-South, Nigeria?

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Table 2: Mean responses of male and female TVET educators competences in the utilization of modern teaching methods in College of Education in South-South, Nigeria

	Modern Teaching	Male Fem			nale		
S/N	<b>Methods Utilization</b>	$\overline{X}$	SD	$\overline{X}$	SD	Decision	
1.	Competency in the utilization science-360-video	of	1.38	0.92	1.48	0.77	VLC
2.	Competency in the utilization class dojo	of	1.42	0.80	1.19	0.92	VLC
3.	Competency in the utilization Canva	of	1.33	0.87	1.14	0.69	VLC
4.	Competency in the utilization	of					VLC
	Adobe spark video		1.05	0.85	1.26	0.82	
5.	Competency in the utilization prezi	of	1.10	0.67	1.20	0.85	VLC
	Cluster mean		1.26	0.84	1.28	0.81	VLC

*Note: VLC* = *Very Low Competent.* 

The data presented on Table 2 showed that the cluster mean responses for male and female TVET educators is 1.26 and 1.28 with corresponding standard deviation of 0.84 and 0.81 respectively. The means showed that TVET educators have very low competent in the utilization of science-360-video, class dojo, canva, adobe spark video and prezi teaching method.

Research Questions 3: What are Male and female TVET educators competences in the utilization of modern assessment methods in College of Education in South-South, Nigeria?

Table 3: Mean responses of male and female TVET educators competences in the utilization of modern assessment methods in College of Education in South-South, Nigeria

	<b>Modern Continuous</b>	Male		Female		
S/N	<b>Assessment Methods</b>	$\bar{X}$	SD	$\bar{X}$	SD	Decision
1.	Competence in the utilization of diagnostic assessment	1.20	0.85	1.09	0.83	VLC
2.	Competence in the utilization of criterion-reference test assessment	1.08	0.89	1.22	0.81	VLC
3.	Competence in the utilization of ipsative assessment	1.30	0.88	1.45	0.76	VLC
4.	Competence in the utilization of norm-referenced test assessment	1.49	0.72	1.33	1.20	VLC
5.	Competence in the utilization of high stake assessment	1.42	1.02	1.30	0.89	VLC
	Cluster mean	1.30	0.87	1.29	0.89	VLC

*Note: VLC = Very Low Competent* 

Table 3 indicated that mean responses of male and female respondents is 1.30 and 1.29 with corresponding standard deviation of 0.87 and 0.89 respectively. The mean response shows

that TVET educators are competent in the utilization of criterion-referenced test assessment, ipsative, norm-referenced test assessment and high stake assessment.

Null Hypothesis 1: There is no significant difference between mean responses of male and female TVET educators on competence in the utilization of modern facilities in College of Education in South-South, Nigeria.

**Table 4:** Independent t-test analysis on TVET educators competence in the utilization of modern facilities in College of Education in South-South, Nigeria.

Variable	n	$\bar{X}$	SD	df	t <sub>cal.</sub>	t <sub>crit.</sub>	Decision
Male	82	2.13	0.81				_
				144	-1.38	1.65	NS
Female	64	2.31	0.76				

*Note: NS* = *Not Significant* 

Table 4 showed that the t-cal was -1.38 while the t-crit, was 1.65. Since the t-cal was less than the t-critical at 144 degree of freedom, thus the null hypothesis of no significant difference between the responses of male and female TVET respondents on the competencies in the utilization of modern teaching facilities in Colleges of Education in South-South, Nigeria was therefore upheld.

Null Hypothesis 2: There is no significant difference between the mean responses of male and female TVET educators on competence in the utilization of modern teaching methods in College of Education in South-South, Nigeria.

**Table 5:** Independent t-test analysis on TVET educators competence in the utilization of modern teaching methods in College of Education in South-South, Nigeria.

Variable	n	$\bar{X}$	SD	df	t <sub>cal</sub>	t <sub>crit</sub>	Decision
Male	82	1.26	0.84				
				144	-0.13	1.65	NS
Female	64	1.28	0.81				

*Note: NS* = *Not Significant* 

Table 5 showed that the t-cal was -0.13 while the t-crit. was 1.65. Since the t-cal was less than the t-critical at 144 degree of freedom, thus the null hypothesis of no significant difference between the responses of male and female TVET respondents on the competencies in the utilization of modern teaching methods in Colleges of Education in South-South, Nigeria was therefore upheld.

**Null Hypothesis 3:** There is no significant difference between the mean responses of male and female TVET educators on competence in the utilization of modern assessment methods in College of Education in South-South, Nigeria.

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**Table 6:** Independent t-test analysis on TVET educators competence in the utilization of modern assessment methods in College of Education in South-South, Nigeria.

Variable	n	$\bar{X}$	SD	df	t <sub>cal</sub>	t <sub>crit</sub>	Decision
Male	82	1.30	0.87				
				144	0.07	1.65	NS
Female	64	1.29	0.89				

*Note: NS* = *Not Significant* 

Table 6 showed that the t-cal was 0.07 while the t-crit. was 1.65. Since the t-cal was less than the t-critical at 144 degree of freedom, thus the null hypothesis of no significant difference between the responses of male and female TVET respondents on the competencies in the utilization of modern teaching assessment methods in Colleges of Education in South-South, Nigeria was therefore upheld.

#### **Discussion of Findings**

Based on the data collected and analyzed for this study, the following findings were made with respect to the research questions and hypotheses.

The result of research question I showed that the cluster mean of the respondents is 2.13 and 2.31 with corresponding standard deviation of 0.81 and 0.76 respectively. All the mean ratings are below the cut-off point of 2.50. This mean that TVET educators have low competency in the utilization of google classroom, flipped classroom, desktop computers, interactive whiteboard and Logitech teaching fecilities. The findings of this study is in support of the findings of Ayonmike, Okwelle and Okeke (2013), Ibelegbu (2013) and Uwemeiya (2014) who stated that teachers lack competency in the utilization of modern teaching facilities such as interactive whiteboard, internet, computers and ICT facilities.

The result of research question 2 revealed that the cluster mean of the respondents is 1.26 and 1.28 with corresponding standard deviation of 0.84 and 0.81 respectively. The mean showed that TVET educators have very low competent in the utilization of science-360-video, class dojo, canva, adobe spark video and prezi teaching method. The findings of the study is in line with the findings of Sarfo (2011), Baba, Victor-Igwe and Baba (2015), Amasi and Giami (2016) who noted the lack of competency in the utilization of modern teaching method in tertiary institutions in Nigeria.

The result of research question 3 indicates that TVET educators have very low competency in the utilization of diagnostic assessment, criterion referenced test, ipsative assessment, norm-referenced test assessment and high stake assessment method. The findings of the study is in agreement with the study of Sheila and Simeon (2015) Igberaharha (2018), Rusalam, Munawar and Hardikusumah (2018) who stated that only use formative and summative assessment method in assessing students performance in Nigerian tertiary institutions. The findings of hypothesis I showed that there was no significant difference in the mean response of the respondents on TVET educators competence in the utilization of modern teaching facilitates in Colleges of Education in South-South, Nigeria.

The findings of hypothesis 2 showed that there was no significant difference in the mean response of the respondents on TVET educators competence in the respondents on TVET educators competence in the utilization of modern teaching methods in Colleges of Education in

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South-South, Nigeria. The findings of hypothesis 3 showed that there was no significant difference in the mean response of respondents on TVET educators competence in the utilization of modern assessment methods in Colleges of Education in South-South, Nigeria.

#### Recommendations

- 1. Government at all levels, NGO's and private institution should organize workshop conferences and seminar on the utilization of modern teaching facilities to enhance TVET educator exposure to modern innovations in lesson delivery.
- 2. Competent TVET educators should be employed by government at all levels, and private institutions, to aid effective utilization of modern teaching methods during lesson delivery.
- 3. Government at all levels; private institutions and NGOs should organize workshop, seminar and conferences on modern assessment method to expose TVET educators to the innovations in assessment methods.
- 4. The training of TVET educators should be a continuous exercise to ensure consistent improvement in the quality of VTE educators. The training should be in two folds: training to acquire qualifications required for teaching and continuing professional training. Both types of training can be acquired either locally or overseas.

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