Quality Assurance in the Use of Information and Communication Technology in Teaching Technical and Vocational Education and Training Courses in Rivers State Tertiary Institutions

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Abstract:- **This study investigated Quality Assurance in the use of Information and Communication Technology in teaching Technical and Vocational Education and Training courses in Rivers State tertiary institutions. The study adopted a descriptive survey design. The population of the study comprised 42 Technical and Vocational Education and Training lecturers, which comprised 16 Rivers State University, Port-Harcourt lecturers and 26 Ignatius Ajuru University of Education lecturers. The population was manageable; hence, it was a census study whereby the entire population was adopted for this study. The instrument for the study was a survey questionnaire tagged "Quality Assurance in the use of Information and Communication Technology in Teaching". The instrument was partitioned into four sections that were structured in the pattern of Likert 5 point rating scale. The instrument was face validated by two experts in the Department of Vocational and Technology Education in Rivers State University, Port-Harcourt. The reliability of the instrument was established using Cronbach Alpha reliability coefficient method. The reliability coefficients achieved was 0.83. Copies of the instrument were administered and retrieved by the researchers on the spot. Mean with Standard Deviation were used to answer the research questions while t-test statistical tool was used to test the hypotheses. This study found among others that some ICT tools were lacking for teaching Technical and Vocational Education and Training courses and that some TVET lecturers are not competent in using some Information and Communication Technology tools for teaching. Therefore, it was recommended among others that every technical teacher or lecturer should be trained from time to time to be familiar with modern ICT tools so that they can be able to use every modern Information and Communication Technology tools that will be purchased for teaching of Technical and Vocational Education and Training courses.**

Keywords: **Information and Communication Technology, Quality Assurance, Teaching & Technical and Vocational Education and Training**

I. INTRODUCTION

The World has become a global village where things are done with the help of technology. Technology has made work very easy hence its importance in every sector of human endeavor cannot be overemphasized. In education, technology through Information and Communication Technology (ICT) has contributed immensely to the development of education. According to Rouse (2005) in Biswas (2017), ICT is a term that encompasses any communication, device or application that involves; radio, television, cellular phones, computer, network hardware and software, satellite system and other services and application associated with them, such as video conferencing and distance learning. Also, Dainth (2009) in Biswas (2017) described ICT as a branch of engineering that deals with the use of computers and telecommunications equipment for the purposes of storing, retrieving, transmitting and manipulating data. Therefore, ICT could be described as the technological means of transmitting information from one device to another.

ICTs utilized in educational sector include radio and television (broadcasting technologies), computer and the internet (digital technologies) and telephony among others. These arrays of technologies are regarded as powerful tools for educational changes and reform. Thus, when appropriately utilized, ICT could help in terms of raising educational quality by helping to make teaching and learning to be an active process connected to real life. Through ICT, teachers could gain access to relevant information for instruction delivery in the classroom. Attesting to this, Chan (2002) opined that ICTs are handy tools that help classroom teachers in improving pedagogy of teaching.

To the students, Moore (2005) asserts that ICTs are relevant in terms of student's motivation which ensures better productivity. ICT makes learning explicit and can take place at the learner's convenience. This means that learners could easily print their course materials online whenever they feel is convenient for them. Another contribution of ICT to education is teleconferencing. Using ICT enables teachers and students interact simultaneously with ease and convenience without being physical in the confinement of a classroom. This is more operational in developed countries where the use of ICT is more appreciated. Castro-Sanchez and Aleman (2011)

carried out a research and found that ICT helps in transforming learning classroom into a learner-centered one.

Basically, learners are actively involved in the learning processes when ICT is adopted as a teaching instrument and this encourages students to make decisions, plans, and so forth (Lu, Hou & Hu ang, 2010). Today, ICTs are utilized in Technical and Vocational Education and Training (TVET) programmes where students are expected to be very active for learning to be effective. According to Federal Republic of Nigeria (2013), TVET is the comprehensive term referring to those aspects of the educational processes involving the study of technologies and related sciences and the acquisition of practical skills, attitudes, understanding and knowledge relating to occupations in various sectors of economic and social life. Also, Ochogba, Johnwest, Isiodu and Igwe (2018) described TVET as that type of education that is systematically organized to train individuals to be practically oriented for paid or self-employment.

The benefits of Technical and Vocational Education and Training to human and national development cannot be overstressed. Ibidapo (2015) opined that TVET is used by all countries of the world in imparting specialized training to their youth to enable them solve the problem of bread and butter. It also encourages self-reliance/self-employment which in turn creates job for the unemployed youths who graduates from the programme (Lawal, 2010). This is why TVET is regarded as a vehicle that takes youths off the streets and indirectly serves as a means of mitigating insecurity. On this premise, Ochogba and Amaechi (2018) aver that the self reliance and employment created by TVET mitigates insecurity. Consequently, TVET is a panacea to insecurity problems bedeviling Rivers State and the country at large.

To achieve the objectives of TVET programmes, different courses are incorporated into the curriculum of TVET. Some of the courses are technical while others are vocational. The technical courses are Automobile, Building, Electrical, Metal work and Wood work. On the other hand, the vocational courses are Agriculture, Fine and Applied Arts, Home Economics, Computer Studies, Entrepreneurship and Tourism. In addition, educational courses are added to train students on how to impart technical and vocational knowledge to students as a teacher after graduation. In line with this, Nnodim and Ochogba (2018) stated that TVET programme comprises very relevant courses like electrical, mechanical, woodwork, automobile, building and other vocational courses like home economics, entrepreneurship, fine and applied art, and even agricultural science that is fast becoming a very important sector in Nigeria. With the use of ICT, some of the practical courses that could be difficult to teach without equipment can be properly taught and students can also research and do other things easily. Hence, Deebom and Goma (2018) found that ICT tools such as laptop, scanner, flash memory, CD ROM software packages and video tapes are available for TVET educators use in teaching. Unfortunately, some of the ICT tools available are not

frequently utilized by TVET educators. This is because some of these TVET educators do not possess the expertise and the technical know-how for them to operate some of these ICT tools (Olabiyi & Asimolokun, 2012). To remedy this, Deebom and Goma (2018) suggested that TVET educators should be trained on how to operate ICT facilities.

Meanwhile, there are several other factors that contribute to teahers not using ICT tools in teaching. Factors such as lack of in-service training on the use of ICT, inadequate ICT facilities, poor supervision and administration of ICT programmes, high cost of acquisition of ICT facilities, low internet frequency, among others are factors that have stampeded the effective use of ICT in TVET institutions in Rivers State (Deebom & Goma, 2018). Also, Chisenga (2004) asserted that one major factor against the use of computer in tertiary institutions is erratic power failure. Furthermore, Okwudishu (2005) asserted that lack of adequate search skill and inability to access or use internet by instructors and students are responsible for poor usage of computer in research.

Meanwhile, with the above limiting factors, the reason for ICT in teaching could be defeated if adequate check is not carried out to ascertain the quality of ICT usage which is known as Quality Assurance (QA). Quality Assurance has been described as a systematic management and assessment of procedures adopted by higher educational institutions and systems in order to monitor performance against objectives and to ensure achievement of quality outputs and quality improvement (Harman, 2000). Similarly, it is the systematic measurement, comparison with a standard, monitoring of processes and an associated feedback loop that confers error prevention (Mohamed, Mohamed & Moemen, 2013). Based on the forgoing, Quality Assurance in the use of ICT in TVET could be described as a systemic approach to ascertaining the quality of ICT usage in teaching TVET courses.

Quality Assurance is fundamentally focused on ascertaining the competence of employees, facilities, frequency of facility usage and the possible challenges, especially in an educational sector to assure quality. Specifically, for quality education to be put in place there should be an assurance of standard or quality in ICT product in teaching and learning TVET courses. On this premise, this research was designed to investigate Quality Assurance in the use of Information and Communication Technology in teaching Technical and Vocational Education and Training courses in Rivers State tertiary institutions.

Purpose of the Study

This study examined Quality Assurance in the use of ICT in teaching TVET courses in Rivers State Tertiary Institutions. Specifically, this study sought to:

1. examine the extent of ICT tools available for teaching TVET courses in Rivers State

2. ascertain the competence of TVET lecturers in the use of ICT tools in teaching.
3. ascertain the frequency of ICT tools usage in teaching TVET courses in Rivers State.
4. find out the challenges of using ICT tools in teaching TVET courses in Rivers State.

Research Questions

1. what is the extent of ICT tools available for teaching TVET courses in Rivers State?
2. what is the competence of TVET lecturers in the use of ICT tools in teaching?
3. what is the frequency of ICT tools usage in teaching TVET curses in Rivers State?
4. what are the challenges of using ICT tools in teaching TVET courses in Rivers State?

Hypotheses

The following null hypotheses were tested at .05 level of significance:

1. There is no significant difference in the mean responses of TVET lecturers in Rivers State University and Ignatius Ajuru University of Education on the extent of ICT tools available for teaching TVET courses in Rivers State.
2. There is no significant difference in the mean responses of TVET lecturers in Rivers State University and Ignatius Ajuru University of Education on the competence of TVET lecturers in the use of ICT tools in teaching.
3. There is no significant difference in the mean responses of TVET lecturers in Rivers State University and Ignatius Ajuru University of Education on the frequency of ICT tools usage in teaching TVET courses in Rivers State.
4. There is no significant difference in the mean responses of TVET lecturers in Rivers State University and Ignatius Ajuru University of Education on the challenges of using ICT tools in teaching TVET courses in Rivers State.

II. METHODOLOGY

The design of the study was a descriptive survey. The study was carried out in Rivers State. The population of the study comprised 42 TVET lecturers, which comprised 16 Rivers State University (RSU), Port-Harcourt lecturers and 26 Ignatius Ajuru University of Education (IAUE) lecturers. The population was manageable; hence, it was a census study whereby the entire population was adopted for this study. The instrument for the study was a survey questionnaire tagged "Quality Assurance in the use of Information and Communication Technology in Teaching" (QAICT). The instrument was partitioned into four sections (A, B, C & D) that were structured in the pattern of Likert 5 point rating scale. Section A was structured in the pattern of Very High Extent (VHE) (4.00-5.00), High Extent (HE) (3.00-3.99), Moderate Extent (ME) (2.00-2.99), Low Extent (LE) (1.00-1.99) and Very Low Extent (VLE) (0.00-0.99). Section B was structured in the pattern of Very Competent (VC) (4.00-5.00), Competent (C) (3.00-3.99), Moderately Competent (MC) (2.00-2.99), Rarely Competent (RC) (1.00-1.99) Not Competent (NC) (0.00-0.99). Section C was structured in the pattern of Frequently Utilized (FU) (4.00-5.00), Utilized (U) (3.00-3.99), Moderately Utilized (MU) (2.00-2.99), Rarely Utilized (RU) (1.00-1.99) and Not Utilized (NU) (0.00-0.99). Section D was structured in rating scale of agreement. The instrument was face validated by two experts in the Department of Vocational and Technology Education in Rivers State University, Port-Harcourt. The reliability of the instrument was established using Cronbach Alpha reliability coefficient method for a measure of internal consistency of the instrument. To achieve the reliability of the study, 12 TVET lecturers were purposively sampled from Federal College of Education (Technical) Omoku and their responses were used. The reliability coefficient achieved was 0.83. Copies of the instrument were administered and retrieved by the researchers on the spot. Mean with Standard Deviation were used to answer the research questions while t-test statistical tool was used to test the hypotheses. For research question 4, mean scores equal or above 3.50 were accepted while mean scores below 3.50 were rejected. Also, t-cal less than t-crit was accepted while t-cal greater than t-crit was rejected.

III. RESULT AND DISCUSSION OF FINDINGS

Research Question 1

What is the extent of ICT tools available for teaching TVET courses in Rivers State?

Table 1: extent of ICT tools available for teaching TVET courses

S/N	ICT tools	IAUE Lecturers (n=26)				RSU Lecturers (n=16)			DF=40
		M	SD	Rank	Decision	M	SD	Rank	Decision
1	Projector	2.04	1.11	16th	ME	3.13	1.26	7th	HE
2	Radio	2.04	1.18	16th	ME	2.31	1.01	18th	ME
3	Television	1.85	1.32	20th	LE	1.93	1.44	19th	LE
4	Internet	2.04	1.22	16th	ME	2.81	1.22	13th	ME
5	Microsoft Power point	2.85	1.74	6th	ME	2.93	1.34	11th	ME

6	Laptop	2.69	1.16	12th	ME	3.69	1.30	4th	HE
7	Desktop	2.62	1.47	13th	ME	3.81	1.05	3rd	HE
8	Computer software	2.81	1.47	9th	ME	3.06	1.44	9th	HE
9	Modem	3.11	1.50	1st	HE	2.50	1.21	16th	ME
10	Smart phone	2.96	1.59	2nd	ME	3.56	1.31	6th	HE
11	Camera	2.96	1.37	2nd	ME	3.69	1.54	4th	HE
12	Microphone	2.31	1.05	15th	ME	3.12	1.20	8th	HE
13	Speaker	2.81	1.41	9th	ME	2.88	1.20	12th	ME
14	Magnetic board	2.85	1.32	6th	ME	2.69	1.20	14th	ME
15	ipad	2.73	1.40	11th	ME	2.56	1.55	15th	ME
16	Pointer	2.38	.983	14th	ME	2.94	1.29	10th	ME
17	Interactive board	1.88	1.28	19th	LE	1.50	1.03	20th	LE
18	Printer	2.88	1.61	5th	ME	2.38	1.20	17th	ME
19	Photocopier	2.85	1.57	6th	ME	4.25	.77	1st	VLE
20	Scanner	2.92	1.62	4th	ME	4.25	.93	1st	VHE
	Grand Mean and SD	**2.58**	**1.37**			**3.00**	**1.22**		

Source: field survey, 2020   M (Mean)   SD (Standard Deviation)

Result in Table 1 shows the extent of ICT tools available for teaching TVET courses. The result shows that ICT tools are available for teaching TVET courses, but more available for RSU lecturers than IAUE lecturers. This is evident in the Grand Mean scores of 2.58 for IAUE lecturers and 3.00 for RSU lecturers, which means that ICT tools are moderately available for IAUE lecturers and to a high extent available for RSU lecturers. Also, the closeness in the Standard Deviation for both groups which is 1.37 and 1.22 shows homogeneity in the responses of both groups. This is in consonance with Deebom and Goma (2018) that found that ICT tools such as laptop, scanner, flash memory, CD ROM software packages and video tapes are available for TVET educators use in teaching

Research Question 2

What is the competence of TVET lecturers in the use of ICT in teaching?

Table 2: competence of TVET lecturers in the use of ICT in teaching

| | | IAUE Lecturers (n=26) | | | | RSU Lecturers (n=16)   DF=40 | | | |
S/N	**Competence of TVET Lecturers in the use of ICT**	**M**	**SD**	**Rank**	**Decision**	**M**	**SD**	**Rank**	**Decision**
1	Operation of projector	2.85	1.29	4th	MC	4.19	1.22	4th	VC
2	Installation of software	3.31	.68	1st	MC	4.38	1.09	3rd	VC
3	Ability to use computer mouse	2.96	1.56	3rd	MC	2.63	1.63	10th	MC
4	Ability to use Microsoft Power point presentation	3.04	1.56	2nd	C	4.50	1.10	1st	VC
5	Proficiency in the use of Keyboard	2.73	1.28	6th	MC	4.06	1.48	5th	VC
6	Ability to use pointer for presentation	2.65	1.26	7th	MC	4.50	1.10	1st	VC
7	Ability to use magnetic board	2.38	1.17	9th	MC	3.63	1.67	6th	C
8	Ability to connect projector to Laptop	2.08	1.20	10th	MC	3.56	1.15	7th	C
9	Ability to connect different peripherals of computer such monitor, mouse and keyboard	2.77	1.34	5th	MC	3.25	1.39	9th	C
10	Ability to scan document and images for teaching	2.58	1.10	8th	MC	3.38	1.45	8th	C
	Grand Mean and SD	**2.74**	**1.24**			**3.81**	**1.33**		

Source: field survey, 2020

Result in Table 2 shows the competence of TVET lecturers in the use of ICT in teaching TVET courses. The result shows that RSU lecturers having more ICT tools are more competent in the use of ICT tools in teaching TVET courses than IAUE TVET lecturers. This is evident in the Grand Mean scores of 2.74 for IAUE lecturers and 3.81 for RSU lecturers. Also, the closeness in the Standard Deviation for both groups which is 1.24 and 1.33 shows homogeneity in the responses of both groups. This is in agreement with Olabiyi and Asimolokun (2012) that opined that TVET educators do not possess the expertise and the technical know-how for them to operate some of these ICT tools.

Research Question 3

What is the frequency of ICT tools usage in teaching TVET courses in Rivers State?

Table 3: frequency of ICT tools usage in teaching TVET courses

		IAUE Lecturers (n=26)				RSU Lecturers (n=16)		DF=40	
S/N	Frequency of ICT tools usage	M	SD	Rank	Decision	M	SD	Rank	Decision
1	Projector	1.73	1.12	19th	RU	3.31	1.14	8th	U
2	Radio	1.85	1.19	18th	RU	3.81	1.05	4th	U
3	Television	2.50	1.30	10th	MU	2.69	1.66	17th	MU
4	Internet	3.12	1.34	4th	U	3.13	1.26	9th	U
5	Microsoft Power point	2.88	1.03	5th	MU	3.06	1.29	13th	U
6	Laptop	3.27	1.69	3rd	U	3.81	1.47	4th	U
7	Desktop	2.61	1.90	8th	MU	4.00	1.32	1st	FU
8	Computer software	2.27	1.59	14th	MU	4.00	1.21	1st	FU
9	Modem	2.73	1.69	7th	MU	3.44	1.41	7th	U
10	Smart phone	3.42	1.70	2nd	U	3.56	1.36	6th	U
11	Camera	1.73	1.19	19th	RU	3.06	1.34	13th	U
12	Microphone	2.15	.73	16th	MU	3.13	1.36	9th	U
13	Speaker	2.12	1.07	17th	MU	3.00	1.21	15th	U
14	Magnetic board	2.19	1.06	15th	MU	2.56	1.46	18th	MU
15	ipad	3.46	1.42	1st	U	3.08	1.57	12th	U
16	Pointer	2.54	1.45	9th	MU	2.50	1.59	19th	MU
17	Interactive board	2.35	.89	13th	MU	2.50	1.46	19th	MU
18	Printer	2.42	.86	12th	MU	2.88	1.54	16th	MU
19	Photocopier	2.43	1.55	11th	MU	3.12	1.53	11th	U
20	Scanner	2.88	1.36	5th	MU	3.94	1.34	3rd	U
	Grand Mean and SD	2.53	1.31			3.23	1.38		

Source: field survey, 2020

Result in Table 3 shows the frequency of ICT tools usage in teaching TVET courses. The result shows that RSU lecturers utilize ICT tools more than IAUE lecturers in teaching TVET courses. This is evident in the Grand Mean scores of 2.53 for IAUE lecturers and 3.23 for RSU lecturers, which means that ICT tools are moderately utilized by IAUE lecturers and to a high extent utilize by RSU lecturers. Also, the closeness in the Standard Deviation for both groups which is 1.31 and 1.38 shows homogeneity in the responses of both groups. This is in line with Deebom and Goma (2018) that found that ICT tools that are available are not frequently utilized by TVET educators.

Research Question 4

What are the challenges of using ICT tools in teaching TVET courses in Rivers State?

Table 4: challenges of using ICT tools in teaching TVET courses

S/N	Challenges of using ICT tools	IAUE Lecturers (n=26)				RSU Lecturers (n=16) DF=40			
		M	SD	Rank	Decision	M	SD	Rank	Decision
1	Epileptic power supply	4.31	1.35	1st	Agree	4.06	1.29	3rd	Agree
2	Cost of maintenance	4.19	1.20	3rd	Agree	4.31	1.14	2nd	Agree
3	Cost of purchasing ICT tools	3.96	1.11	4th	Agree	4.44	.89	1st	Agree
4	Difficulty in adapting to new versions of ICT tools	4.27	1.04	2nd	Agree	3.75	1.06	6th	Agree
5	Lack of adequate ICT tools to accommodate the number of students	3.96	1.25	4th	Agree	3.88	1.26	5th	Agree
6	Lack of conducive classroom	3.65	1.57	6th	Agree	3.50	1.59	7th	Agree
7	Availability of inferior ICT tools	3.08	1.35	7th	Agree	4.00	1.32	4th	Agree
	Grand Mean and SD	3.92	1.27			3.99	1.22		Agree

Source: field survey, 2020

Result in Table 4 shows that IAUE and RSU Lecturers agreed that all the variables highlighted are challenges of using ICT tools in teaching TVET courses in Rivers State. This is evident in the Grand Mean scores of 3.92 for IAUE lecturers and 3.99 for RSU lecturers, which are both greater than the acceptable mean score of 3.50 earlier stated. Also, the closeness in the Standard Deviation for both groups which is 1.27 and 1.22 shows homogeneity in the responses of both groups. This is in conformity with previous research. Deebom and Goma (2018) identified factors such as lack of in-service training on the use of ICT, inadequate ICT facilities, poor supervision and administration of ICT programmes, high cost of acquisition of ICT facilities, low internet frequency, among others as factors that have stampeded the effective use of ICT in TVET institutions in Rivers State. Also, Chisenga (2004) opined that one major factor against the use of computer in tertiary institutions is erratic power failure. Furthermore, Okwudishu (2005) asserted that lack of adequate search skill and inability to access or use internet by instructors and students are responsible for poor usage of computer in research

Hypothesis 1:

There is no significant difference in the mean responses of TVET lecturers in Rivers State University and Ignatius Ajuru University of Education on the extent of ICT tools available for teaching TVET courses in Rivers State.

Table 5: t-Test Responses on extent of ICT tools available for teaching TVET courses in Rivers State

Category	n	M	SD	t-cal	t-crit	Remark
IAUE Lecturers	26	2.58	1.37			
				1.03	2.02	NS
RSU Lecturers	16	3.00	1.22			

Not Significant (NS) Significant (S)

Table 5 shows that the Mean with Standard Deviation scores of IAUE lecturers were 2.58 and 1.37 respectively, while RSU lecturers had Mean and Standard Deviation scores of 3.00 and 1.22 respectively. The t-cal value was 1.03, while the t-crit was 2.02 at a .05 level of significance for two tailed test. This result shows that t-cal was less than t-crit, which means that the null hypothesis was accepted. Thus, there was no significant difference in the mean responses of TVET lecturers in RSU and IAUE on the extent of ICT tools available for teaching TVET courses in Rivers State.

Hypothesis 2:

There is no significant difference in the mean responses of TVET lecturers in Rivers State University and Ignatius Ajuru University of Education on the competence of TVET lecturers in the use of ICT tools in teaching.

Table 6: t-Test Responses on competence of TVET lecturers in the use of ICT tools in teaching

Category	n	M	SD	t-cal	t-crit	Remark
IAUE Lecturers	26	2.74	1.24			
				2.60	2.02	S
RSU Lecturers	16	3.81	1.33			

Table 6 shows that the Mean with Standard Deviation scores of IAUE lecturers were 2.74 and 1.24 respectively, while RSU lecturers had Mean and Standard Deviation scores of 3.81 and 1.33 respectively. The t-cal value was 2.60, while the t-crit was 2.02 at a .05 level of significance for two tailed test. This result shows that t-cal was greater than t-crit, which means that the null hypothesis was rejected. Thus, there was a significant difference in the mean responses of TVET

lecturers in RSU and IAUE on the competence of TVET lecturers in the use of ICT tools in teaching.

Hypothesis 3:

There is no significant difference in the mean responses of TVET lecturers in Rivers State University and Ignatius Ajuru University of Education on the frequency of ICT tools usage in teaching TVET courses in Rivers State.

Table 7: t-Test Responses on frequency of ICT tools usage in teaching TVET courses in Rivers State

Category	n	M	SD	t-cal	t-crit	Remark
IAUE Lecturers	26	2.53	1.31			
				1.63	2.02	NS
RSU Lecturers	16	3.23	1.38			

Table 7 shows that the Mean with Standard Deviation scores of IAUE lecturers were 2.53 and 1.31 respectively, while RSU lecturers had Mean and Standard Deviation scores of 3.23 and 1.38 respectively. The t-cal value was 1.63, while the t-crit was 2.02 at a .05 level of significance for two tailed test. This result shows that t-cal was less than t-crit, which means that the null hypothesis was accepted. Thus, there was no significant difference in the mean responses of TVET

lecturers in RSU and IAUE on the frequency of ICT tools usage in teaching TVET courses in Rivers State.

Hypothesis 4:

There is no significant difference in the mean responses of TVET lecturers in Rivers State University and Ignatius Ajuru University of Education on the challenges of using ICT tools in teaching TVET courses in Rivers State.

Table 8: t-Test Responses on the challenges of using ICT tools in teaching TVET courses in Rivers State

Category	n	M	SD	t-cal	t-crit	Remark
IAUE Lecturers	26	3.92	1.27			
				.18	2.02	NS
RSU Lecturers	16	3.99	1.22			

Table 8 shows that the Mean with Standard Deviation scores of IAUE lecturers were 3.92 and 1.27 respectively, while RSU lecturers had Mean and Standard Deviation scores of 3.99 and 1.22 respectively. The t-cal value was .18, while the t-crit was 2.02 at a .05 level of significance for two tailed test. This result shows that t-cal was less than t-crit, which means that the null hypothesis was accepted. Thus, there was no significant difference in the mean responses of TVET lecturers in RSU and IAUE on the challenges of using ICT tools in teaching TVET courses in Rivers State.

IV. CONCLUSION

This study concludes that some ICT tools are available for TVET teachers in teaching. utilized in teaching TVET courses. However, some TVET lecturers are not competent in using some ICT tools for teaching and as such these tools are not frequently utilized in teaching TVET courses. Furthermore, there are also challenges hampering the use of ICT tools in teaching TVET courses in Rivers State, such as epileptic power supply, cost of maintenance, cost of purchase,

Lack of adequate ICT tools to accommodate the number of students, among others.

V. RECOMMENDATIONS

The following recommendations were made:

1. Government should provide relevant ICT tools for every technical college or institution so that teachers can be able to teach with ICT tools which is gradually becoming a trend in education.
2. Every technical teacher or lecturer should be trained from time to time to be familiar with modern ICT tools so that they can be able to use every modern ICT that will be purchased for teaching of TVET courses.
3. There should be supervision to confirm if TVET lecturers are using ICT tools in teaching so that those whose frequency of usage is below expectation can be advised to start using ICT tools in teaching.
4. There should be alternative power supply in TVET departments to help resolve the challenge of epileptic

power failure thereby increase the frequency of ICT usage in teaching TVET courses.

REFERENCES

[1] Biswas, R.K. (2017). A study on status of Information and Communication Technology use in various teacher training institutes of tribal areas. *International Journal of Advanced Educational Research, 2*(6), 375-379.

[2] Castro-Sánchez, J.J. & Alemán, E.C. (2011). Teachers' opinion survey on the use of Information and Communication Technology tools to support attendance-based teaching. *Journal Computers and Education, 56*, 911-915.

[3] Chan, F.M. (2002). Information and Communication Technology in Malaysian schools: policy and strategies. Paper presented at a workshop on the 22 October. Tokyo Japan—promotion of ICT in education to narrow the digital divide, 15

[4] Chisenga, J. (2004*). The use of Information and Communication Technology in African Public Libraries: A Survey of Ten Countries in Anglophone African*. Oxford: International Network for the Availability of Scientific Publications (INASP).

[5] Deebom, M.T. & Goma, O.T. (2018). Utilization of Information Communication and Technology for sustainable manpower development among technical educators in tertiary institutions in Rivers State, Nigeria. *International Journal of Innovative Information Systems & Technology Research, 6*(2), 48-58.

[6] Federal Republic of Nigeria (2013). *National Policy on Education (Revised Ed).* Yaba Lagos: Nigerian Educational Research and Development Council.

[7] Harman, G. (2000). *Quality assurance in higher education*. Bagkok: Ministry of University Afairs & UNESCO Publication.

[8] Ibidapo, A.B. (2015). Technical and Vocational Education and Training and local technologies for sustainable entrepreneurship skills development. *Journal of Research in Vocational and Technical Education, 8*(1), 107-120.

[9] Lawal, A.W. (2010). Rebranding Vocational and Technical Education in Nigeria for sustainable national development: Problems and prospects. 1st National Conference of School of Business Education, Federal College of Education (Technical), Bichi, 1st -4th November, 2010.

[10] Lu, Z., Hou, L. & Huang, X. (2010). A research on a student-centred teaching model in an Information and Communication Technology-based English audio-video speaking class1. *International Journal of Education and Development using Information and Communication Technology, 6*(3), 101-123.

[11] Mohamed, M.H., Mohamed, S.H. & Moemen, N.E. (2013). Quality control, quality assurance, systems and applications. Faculty of engineering structural engineering program.

[12] Moore, C.D. (2005). Is Information and Communication Technology being used to its potential to improve teaching and learning across the curriculum?. Retrieved 23rd January, 2020 from http://www.teacherresearch.net.

[13] Nnodim, A.U. & Ochogba, C.O. (2018). Perception on federal government of Nigeria whistle blowing policy on the Implementation of technical and vocational education and training Programmes in tertiary institutions in rivers state, Nigeria. *Asian Journal of Science and Technology, 09*(06), 8272-827.

[14] Ochogba, C.O. & Amaechi, O.J. (2018). The influence of technical skills acquisition in curbing insecurity challenges in Rivers State. *International Journal of Education and Evaluation, 4*(2), 19-26.

[15] Ochogba, C.O., Johnwest, E.K., Isiodu, B.N. & Igwe, C.C. (2017). Implementation of entrepreneurship education in Technical and Vocational Education and Training Programme for youth self-reliance in Rivers State. *International Journal of Innovative Social & Science Education Research, 5*(4), 21-29.

[16] Okwudishu, C.H. (2005*).* Awareness and use of Information & Communication Technology among Villages secondary school teacher in Aniocha South local Government area of Delta State. Unpublished B.SC (LIS) project. Delta State University.

[17] Olabiyi, O.S. & Asimolokun, B.A. (2012). Challenges of using information communication technology in Nigerian technical vocational education institutions   Retrieved 23rd January, 2020 from https://pdfs.semanticscholar.org/e715/c2e7e8066e15cd0f1c6a50439e3488796853.pdf