Equatorial Journal of Education and Curriculum Studies. 2018; 3(1): 1- 14
Journal Homepage: www.erjournals.com
ISSN Online: 0184-7937

Utilization of Instructional Facilities in Electronics Workshop Practice and Maintenance for Students' Acquisition of Trade Skills in Technical Colleges in Akwa Ibom State, Nigeria

Aniekan Elijah Asukwo

Department of Electrical Technology Education, Modibbo Adama University of Technology, Yola, Adamawa State, Nigeria
Corresponding email: asukwoaniekan@yahoo.com

ABSTRACT

This study investigated the utilization of instructional facilities in Electronics Workshop Practice and Maintenance for students' acquisition of trade skills in technical colleges in Akwa Ibom State. Three research questions and three hypotheses were formulated to guide the study. A survey research design was adopted for the study and the entire population of NTCIII students of Electronics Workshop Practice and Maintenance was used for the study. Questionnaires were distributed by the researcher and then retrieved for analysis on completion. Mean and standard deviation were used to answer the three research questions while t-test statistics was used to test the three hypotheses. The findings of the study revealed that even though most consumables were often utilized, only a few equipment and tools were often utilized for the acquisition of trade skills in Electronics Workshop Practice and Maintenance. Also, the findings indicated both male and female students shared similar views on the extent of utilization of the instructional facilities. It was therefore recommended that Workshops and seminars should be organized on the importance and benefits of utilization of instructional facilities in Electronics Workshop Practice and Maintenance for the teachers by principals of the technical colleges

Keywords: Electronics Workshop Practice and Maintenance, Utilization, Instructional Facilities, Trade Skills

Citation: Asukwo, A. E. (2018). Utilization of Instructional Facilities in Electronics Workshop Practice and Maintenance for Students' Acquisition of Trade Skills in Technical Colleges in Akwa Ibom State, Nigeria. *Equatorial Journal of Education and Curriculum Studies,* 3(1): 1- 14

Introduction

The major goal of technical colleges in Nigeria is to prepare and help students acquire the requisite trade skills that would enable them secure employment, become self-employed and be able to employ others, or pursue further education in tertiary institutions. The technical colleges are charged with the goals of providing trained manpower in the applied sciences, technology and business particularly at craft, advanced craft and technical levels; providing the technical knowledge and vocational skills necessary for agricultural,

commercial and economic development; and giving training and imparting the necessary skills to individuals for self-reliance economically (Umar & Ma'aji, 2010; Federal Republic of Nigeria, 2013). These goals can only be achieved where the training environment in which the learner is trained is a replica of the environment in which he must subsequently work, and the training is carried out in the same way with the same operations, the same tools and the same machines as in the occupation itself (Prosser and Quigley, 1949; Henry, Echa and Alfred, 2017). Therefore, the utilization of instructional facilities in teaching Electronics Workshop Practice and Maintenance in technical colleges plays a very important role in achieving the performance objectives of the curriculum and thus making the transition from school to employment very effective and efficient with little need for adjustment.

Instructional facilities are those tools, equipment, machines, and consumable materials that are being used from time to time for teaching/learning a trade (Bello and Shu'aibu, 2013; Akpabio and Ogiriki, 2017). According to Ogbu (2015), utilization of instructional facilities is the process of using procured and accessible facilities, tools, components, equipment and appliances to make teaching and learning process easier, interesting and rewarding. Olagunju and Abiona (2008) were of the view that utilization is the process of managing and organizing resources. Gujjar, Khan, Baig, Ramzan & Saifi (2010) were of the opinion that the proper utilization of instructional and physical facilities would improve the performance and output of the institutions. It is therefore presumed that the adequate utilization of instructional facilities in the teaching and learning of Electronics Workshop Practice and Maintenance would improve the performance and output of the technical colleges, thus producing graduates that can be self-reliant or perform competently in their chosen vocation with little or no need for pre-employment training. According to Uwaifo (2009), the correct use of instructional facilities often gives the correct representation to the abstract ideas, thereby making their meaning clever and pleasant, and serving as a useful purpose in promoting the understanding the concept and principles. Eze (2015) was also of the opinion that effective utilization of appropriate instructional facilities to anchor skill teaching ensures reliable skill acquisition by technical college students. Utilization of instructional facilities in Electronics Workshop Practice and Maintenance is therefore vital to the development of the students' trade skills for self-reliance economically.

Electronics Workshop Practice and Maintenance is a unit of Radio, Television and Electronics Work Trade Curriculum which equip students with the requisite trade skills, knowledge and attitudes needed to be able to diagnose faults, and carry out repairs and maintenance on any electronic system. The acquired trade skills and knowledge in Electronics Workshop Practice and Maintenance also enables the students to secure employment, become self-employed and be able to employ others, or pursue further education in tertiary institutions. The acquired trade skills and knowledge include soldering and desoldering in electronic circuit, use of electronic measuring instruments, electronic repairs, fault finding and repairs in radio receiver, diagnosis and repair of monochrome TV receiver, and diagnosis and repair of colour TV receiver (Federal Ministry of Education, 2012).

Statement of Problem

The current state of recession and rate of unemployment bedevilling the country of Nigeria has become a major problem for the government who has not been able to proffer a solution as expected. More alarming is the number of Electronics Workshop Practice and Maintenance graduates of technical colleges seen roaming the streets in search of white collar job in an era where almost everything is electronic due to technological advancement. These young technical college graduates find it difficult to get a job or become self-reliant because they lack the requisite trade skills required for diagnosing, repairing and maintaining an electronic system even when much emphasis has been made by the government of Nigeria on technical and vocational education in the provision of machineries, equipment, tools and materials for effective training in the technical

colleges. This has raised questions like what could be the cause of this undesired outcome. Where the instructional facilities are available, are they being utilized? How often are the available instructional facilities utilized? What are the challenges inhibiting the use of the available instructional facilities? An observation by Bolick, Berson, Coutts and Heinecke in Okobia (2011) indicated that while some educators are fascinated by the potential of instructional materials in enhancing teaching and learning, other teachers lagged behind in using instructional materials to teach. This necessitated the study on Utilization of Instructional Facilities in Electronics Workshop Practice and Maintenance for Students' Acquisition of Trade Skills in Technical Colleges in Akwa Ibom State.

Research Questions

The following research questions were formulated to guide the study:

- To what extent are equipment utilized in Electronics Workshop Practice and Maintenance for students' acquisition of trade skills in technical colleges in Akwa Ibom State?

- To what extent are tools utilized in Electronics Workshop Practice and Maintenance for students' acquisition of trade skills in technical colleges in Akwa Ibom State?

- To what extent are consumables utilized in Electronics Workshop Practice and Maintenance for students' acquisition of trade skills in technical colleges in Akwa Ibom State?

Null Hypotheses

The following null hypotheses were tested at 0.05 level of significance.

H_{01}: There is no significant difference in responses of male and female NTCIII students on the utilization of equipment in Electronics Workshop Practice and Maintenance for students' acquisition of trade skills in technical colleges in Akwa Ibom State.

H_{02}: There is no significant difference in responses of male and female NTCIII students on the utilization of tools in Electronics Workshop Practice and Maintenance for students' acquisition of trade skills in technical colleges in Akwa Ibom State.

H_{03}: There is no significant difference in responses of male and female NTCIII students on the utilization of consumables in Electronics Workshop Practice and Maintenance for students' acquisition of trade skills in technical colleges in Akwa Ibom State.

METHODOLOGY

Design of the Study

The design of this study was a descriptive survey design. The researcher selected a sample of respondents and administered questionnaires to them. The study involved the use of structured questionnaire to elicit information from the students and teachers of Electronics Workshop Practice and Maintenance of the specified government technical colleges in Akwa Ibom state.

Area of the Study

The area of the study was Akwa Ibom State. Akwa Ibom State is located in the coastal southern part of Nigeria and is bordered on the east by Cross River State, on the West by Rivers State and Abia State, and on the south by the Atlantic Ocean and the southernmost tip of Cross River State. Akwa Ibom State has 1 Federal and 4 state technical colleges accredited by National Board for Technical Education (NBTE) to run NABTEB programme with specialization in Radio Television and Electronics Work. They are Federal Science and Technical College Uyo, Government Technical College Ewet, Community Technical College Ikot-Akata, Union Technical College Ikpa-Esit Eket and Mainland Technical College Oron.

Population of the Study

The population for the study consisted of the 58 NTCIII students of Radio Television and Electronics Work for 2017/2018 academic session the 4 state technical colleges accredited by National Board for Technical Education (NBTE), to

run NABTEB programme with specialization in Radio Television and Electronics Work in Akwa Ibom State. Specifically, the population consisted of 18 NTCIII students from Government Technical College Ewet, 11 NTCIII students from Community Technical College Ikot-Akata, 22 NTCIII students from Union Technical College IKpa-Esit Eket, and 7 NTCIII students from Mainland Technical College Oron (STSB, 2017).

Sample and Sampling Technique

The sample for this study was made up of the entire population of the selected schools due to the low population of students in the department. Therefore, no sampling technique was used.

Instrument for Data Collection

A structured questionnaire titled Utilization of Instructional Facilities in Electronics Workshop Practice and Maintenance Questionnaire (UIFEWPMQ) was used as the instrument for this study. The instrument was developed by the researcher to elicit the objective opinions of the respondents. The questionnaire was divided into two parts, A and B. Part A addressed the personal data of the respondent. Part B addressed the extent of utilization of instructional facilities in the above mentioned government technical colleges respectively. In specific terms, Part B was adopted from the NERDC Senior Secondary School Trade Curriculum for Radio, Television and Electronics Work and further divided into three sections in line with the three specific purposes of the study.

Validation of the Instrument

After constructing the questionnaire, it was given to three experts in the department of Vocational Education, University of Uyo, to face validate. Suggestions, observations and criticisms of the experts were used to modify and improve the instrument.

Reliability of the Instrument

To establish the internal consistency of the instrument, copies of the questionnaire was administered to 12 NTCIII students of Radio, Television and Electronics Work department of Federal Science Technical College, Uyo. This is because Federal Science Technical College, Uyo does not constitute the sample population of the study. The scores obtained were analyzed using Cronbach Alpha. A reliability coefficient of 0.89 was obtained. Based on the 0.89 coefficient, the instrument was considered highly reliable for the study.

Method of Data Collection

The researcher went to the 4 technical colleges and administered the questionnaires on the NTCIII students of the department after self-introduction and explanation of the purpose of visiting the schools. The copies of the questionnaires used for the research was given to the students of the technical colleges under study. The filled questionnaires were then collected from them for analysis.

Method of Data Analysis

Mean was used to answer the three research questions. According to Uzoagulu (2011), mean is used when the greatest reliability is required in interpreting the agreement of a group of respondents of a population. Therefore, the researcher's choice of mean as a statistical tool for analysing the research questions is its ability to interpret the agreement of the respondents on an item in the questionnaire. Uzoagulu (2011) also stated that standard deviation is a measure of variability from the mean. Therefore, the researcher's choice of standard deviation as another statistical tool for analysing the research questions is its ability to determine how tightly clustered or how widely scattered the opinions of the respondent are distributed around the mean opinion. The three null hypotheses were tested using t-test. SPSS package was used to analyse the data.

Decision Rule

A mean of 2.50 which is the mid-point of the four point scale served as the cut-out point. That is, the means of all the respondents of any particular item greater than or equal to 2.50 was regarded as Often Utilized (OU) and the means less than this level, were regarded as Rarely Utilized (RU). The inferential statistical tool used to test the

hypotheses of the study was t-test at 0.05 level of significance. Any hypothesis with p value less than or equal to 0.05 was regarded as significant; otherwise, it was not significant.

RESULTS

Research Question 1: To what extent are equipment utilized in Electronics Workshop Practice and Maintenance for students' acquisition of trade skills in technical colleges in Akwa Ibom State?

Table 1: Mean and Standard Deviation on the extent of utilization of equipment in Electronics Workshop Practice and Maintenance for students' acquisition of trade skills in technical colleges in Akwa Ibom State

S/N	ITEMS	n	$\bar{x}$	SD	REMARK
1.	Dual Trace Oscilloscope	58	1.77	.67	Rarely Utilized
2.	Oscilloscope Probe	58	1.68	.70	Rarely Utilized
3.	Signal Tracer	58	1.79	.66	Rarely Utilized
4.	Audio Signal Generator	58	1.75	.68	Rarely Utilized
5.	Sweep Generator	58	1.72	.69	Rarely Utilized
6.	Frequency Counter	58	1.74	.71	Rarely Utilized
7.	High Voltage Probe	58	1.91	.70	Rarely Utilized
8.	RF Signal Generator	58	1.55	.72	Rarely Utilized
9.	Colour Pattern Generator	58	1.55	.72	Rarely Utilized
10.	TV Frequency Sweep Generator	58	1.58	.62	Rarely Utilized
11.	Video Analyzer	58	1.60	.49	Rarely Utilized
12.	Tube Analyzer	58	1.72	.64	Rarely Utilized
13.	Substitute Tuner	58	1.67	.65	Rarely Utilized
14.	Digital Multimeter	58	2.70	.56	Often Utilized
15.	Analog Multimeter	58	3.05	.68	Often Utilized
16.	Transistor Tester	58	3.10	.71	Often Utilized
17.	Volt-Ohm-Milliameter	58	1.72	.58	Rarely Utilized

KEY: $\bar{x}$ = Mean Response of NTCIII Students, SD = Standard Deviation, n = Number of Respondents

Table 1 above shows that only digital multimeter, analog multimeter and transistor tester had their mean score above 2.50 which proved they were often utilized. Other equipment had their mean score below 2.50 indicating they were rarely utilized in Electronic Workshop Practice and Maintenance.

Research Question 2: To what extent are tools utilized in Electronics Workshop Practice and Maintenance for students' acquisition of trade skills in technical colleges in Akwa Ibom State?

Table 2: Mean and Standard Deviation on the extent of utilization of tools in Electronics Workshop Practice and Maintenance for students' acquisition of trade skills in technical colleges in Akwa Ibom State

S/N	ITEMS	n	$\bar{x}$	SD	REMARK
18.	Set of Screwdrivers	58	2.93	.76	Often Utilized
19.	Nut Drivers	58	2.58	.75	Often Utilized

20.	Soldering Iron	58	2.62	.81	Often Utilized
21.	Desoldering Device	58	2.65	.47	Often Utilized
22.	Diagonal Cutters	58	2.75	.73	Often Utilized
23.	Steel Wire Brush	58	1.51	.50	Rarely Utilized
24.	Pocket Knife	58	1.60	.61	Rarely Utilized
25.	Wire Strippers	58	1.58	.49	Rarely Utilized
26.	Portable Drilling Machine	58	1.72	.69	Rarely Utilized
27.	Small Bench Vice	58	1.48	.50	Rarely Utilized
28.	Alignment tools	58	1.60	.72	Rarely Utilized
29.	Needle Pliers	58	1.56	.49	Rarely Utilized
30.	Penlight	58	1.70	.45	Rarely Utilized
31.	Flashlight	58	1.72	.45	Rarely Utilized
32.	Magnifying Lens	58	1.44	.50	Rarely Utilized
33.	Small Plastic Containers	58	2.58	.49	Often Utilized
34.	Steel Bowl	58	1.51	.50	Rarely Utilized
35.	Files	58	1.93	.25	Rarely Utilized
36.	Crimping Tool	58	1.27	.45	Rarely Utilized
37.	Overhead Projector	58	1.36	.48	Rarely Utilized

KEY: $\bar{x}$ = Mean Response of NTCIII Students, SD = Standard Deviation, n = Number of Respondents

Table 2 above shows that only set of screwdrivers, nut drivers, soldering iron, desoldering device, diagonal cutters and small plastic containers had their mean score above 2.50 which proved they were often utilized. Other tools had their mean score below 2.50 indicating they were rarely utilized in Electronic Workshop Practice and Maintenance.

Research Question 3: To what extent are consumables utilized in Electronics Workshop Practice and Maintenance for students' acquisition of trade skills in technical colleges in Akwa Ibom State?

Table 3: Mean and Standard Deviation on the extent of utilization of consumables in Electronics Workshop Practice and Maintenance for students' acquisition of trade skills in technical colleges in Akwa Ibom State

S/N	ITEMS	n	$\bar{x}$	SD	REMARK
38.	Solder for Electronic	58	2.70	.45	Often Utilized
39.	Soldering Gum	58	1.48	.50	Rarely Utilized
40.	Heat Sinks	58	1.60	.49	Rarely Utilized
41.	Electrical Tape	58	1.79	.40	Rarely Utilized
42.	Sand Paper	58	2.62	.67	Often Utilized
43.	Screws	58	2.56	.59	Often Utilized
44.	Assorted Resistors	58	2.87	.65	Often Utilized
45.	Tweeters	58	1.56	.49	Rarely Utilized

46.	Inductors	58	1.75	.43	Rarely Utilized
47.	Assorted Capacitors	58	3.18	.68	Often Utilized
48.	Transistors	58	2.77	.42	Often Utilized
49.	Transformers	58	3.13	.73	Often Utilized
50.	Switches	58	2.70	.45	Often Utilized
51.	Diodes	58	3.15	.69	Often Utilized
52.	Linear Integrated Circuit (IC)	58	2.75	.90	Often Utilized
53.	IC Sockets	58	2.87	.89	Often Utilized
54.	Fuses	58	1.74	.78	Rarely Utilized
55.	Vero Board	58	3.12	.72	Often Utilized
56.	Cables/Wires	58	3.18	.66	Often Utilized

KEY: $\bar{x}$ = Mean Response of NTCIII Students, SD = Standard Deviation, n = Number of Respondents

Table 3 above shows that only soldering gum, heat sinks, electrical tape, tweeters, inductors and fuses had their mean score below 2.50 which proved they were rarely utilized. Other consumables had their mean score above 2.50 indicating they were often utilized in Electronic Workshop Practice and Maintenance.

Hypothesis 1: There is no significant difference in mean responses of male and female NTCIII students on the utilization of equipment in Electronics Workshop Practice and Maintenance for students' acquisition of trade skills in technical colleges in Akwa Ibom State.

Table 4: t-test analysis of the mean responses of male and female NTCIII students on the extent of utilization of equipment in Electronics Workshop Practice and Maintenance for students' acquisition of trade skills in technical colleges in Akwa Ibom State.

S/N	ITEMS	Gender	n	$\bar{x}$	SD	df	t	p	Decision
1.	Dual Trace Oscilloscope	Male Female	46 12	1.84 1.50	.69 .52	56	1.60	.11	Not Significant
2.	Oscilloscope Probe	Male Female	46 12	1.60 2.00	.68 .73	56	-1.74	.08	Not Significant
3.	Signal Tracer	Male Female	46 12	1.86 1.50	.68 .73	56	1.73	.08	Not Significant
4.	Audio Signal Generator	Male Female	46 12	1.69 2.00	.66 .73	56	-1.38	.17	Not Significant
5.	Sweep Generator	Male Female	46 12	1.71 1.75	.65 .86	56	-0.14	.88	Not Significant
6.	Frequency Counter	Male Female	46 12	1.80 1.50	.74 .52	56	1.32	.19	Not Significant
7.	High Voltage Probe	Male	46	1.89	.70	56	-0.47	.64	Not Significant

		Female	12	2.00	.73				
8.	RF Signal Generator	Male Female	46 12	1.63 1.25	.77 .45	56	1.63	.10	Not Significant
9.	Colour Pattern Generator	Male Female	46 12	1.56 1.50	.77 .52	56	0.27	.78	Not Significant
10.	TV Frequency Sweep Generator	Male Female	46 12	1.54 1.75	.54 .86	56	-1.02	.31	Not Significant
11.	Video Analyzer	Male Female	46 12	1.56 1.75	.50 .45	56	-1.15	.25	Not Significant
12.	Tube Analyzer	Male Female	46 12	1.78 1.50	.66 .52	56	1.36	.17	Not Significant
13.	Substitute Tuner	Male Female	46 12	1.58 2.00	.71 .00	56	-1.98	.05	Significant
14.	Digital Multimeter	Male Female	46 12	2.69 2.75	.59 .45	56	-0.29	.76	Not Significant
15.	Analog Multimeter	Male Female	46 12	3.19 2.50	.65 .52	56	3.40	.00	Significant
16.	Transistor Tester	Male Female	46 12	3.26 2.50	.68 .52	56	3.59	.00	Significant
17.	Volt-Ohm-Milliameter	Male Female	46 12	1.71 1.75	.62 .45	56	-0.17	.86	Not Significant

KEY: $\bar{x}$ = Mean Response of NTCIII Students, SD = Standard Deviation, n = Number of Respondents, df = Degree of Freedom, t = Observed t-value, p = Significance (2-tailed)

Table 4 above shows that in most of the items, there was no statistical significant difference between the responses of male and female NTCIII students on the utilization of equipment in Electronics Workshop Practice and Maintenance. Significant difference was observed only in responses on extent of utilization of substitute tuner, analog multimeter and transistor tester.

Hypothesis 2: There is no significant difference in mean responses of male and female NTCIII students on the utilization of tools in Electronics Workshop Practice and Maintenance for students' acquisition of trade skills in technical colleges in Akwa Ibom State.

Table 5: t-test analysis of the mean responses of male and female NTCIII students on the extent of utilization of tools in Electronics Workshop Practice and Maintenance for students' acquisition of trade skills in technical colleges in Akwa Ibom.

S/N	ITEMS	Gender	n	$\bar{x}$	SD	df	t	p	Decision
18.	Set of Screwdrivers	Male Female	46 12	2.97 2.75	.82 .45	56	0.91	.36	Not Significant
19.	Nut Drivers	Male Female	46 12	2.60 2.50	.80 .52	56	0.44	.65	Not Significant
20.	Soldering Iron	Male Female	46 12	2.58 2.75	.80 .86	56	-0.61	.54	Not Significant
21.	Desoldering Device	Male Female	46 12	2.69 2.50	.46 .52	56	1.26	.21	Not Significant
22.	Diagonal Cutters	Male Female	46 12	2.76 2.75	.79 .45	56	0.04	.96	Not Significant
23.	Steel Wire Brush	Male Female	46 12	1.52 1.50	.50 .52	56	0.13	.89	Not Significant
24.	Pocket Knife	Male Female	46 12	1.63 1.50	.64 .52	56	0.64	.52	Not Significant
25.	Wire Strippers	Male Female	46 12	1.60 1.50	.49 .52	56	0.67	.50	Significant
26.	Portable Drilling Machine	Male Female	46 12	1.71 1.75	.65 .86	56	-0.14	.88	Not Significant
27.	Small Bench Vice	Male Female	46 12	1.54 1.25	.50 .45	56	1.83	.07	Not Significant
28.	Alignment tools	Male Female	46 12	1.43 2.25	.68 .45	56	-3.87	.00	Significant
29.	Needle Pliers	Male Female	46 12	1.52 1.75	.50 .45	56	-1.42	.16	Not Significant
30.	Penlight	Male Female	46 12	1.69 1.75	.46 .45	56	-0.36	.71	Not Significant
31.	Flashlight	Male Female	46 12	1.78 1.50	.41 .51	56	1.98	.05	Significant

32.	Magnifying Lens	Male Female	46 12	1.50 1.25	.50 .45	56	1.55	.12	Not Significant
33.	Small Plastic Containers	Male Female	46 12	2.67 2.25	.47 .45	56	2.78	.00	Significant
34.	Steel Bowl	Male Female	46 12	1.58 1.25	.49 .45	56	2.12	.03	Significant
35.	Files	Male Female	46 12	1.91 2.00	.28 .00	56	-1.05	.29	Not Significant
36.	Crimping Tool	Male Female	46 12	1.21 1.50	.41 .52	56	-1.98	.05	Significant
37.	Overhead Projector	Male Female	46 12	1.32 1.50	.47 .52	56	-1.10	.27	Not Significant

KEY: $\bar{x}$ = Mean Response of NTCIII Students, SD = Standard Deviation, n = Number of Respondents, df = Degree of Freedom, t = Observed t-value, p = Significance (2-tailed)

Table 5 above shows that in most of the items, there was no statistical significant difference between the responses of male and female NTCIII students on the utilization of tools in Electronics Workshop Practice and Maintenance. Significant difference was observed only in responses on extent of utilization of wire strippers, alignment tools, flash light, small plastic containers, steel bowl and crimping tool.

Hypothesis 3: There is no significant difference in mean responses of male and female NTCIII students on the utilization of consumables in Electronics Workshop Practice and Maintenance for students' acquisition of trade skills in technical colleges in Akwa Ibom State.

Table 6: t-test analysis of the mean responses of male and female NTCIII students on the extent of utilization of consumables in Electronics Workshop Practice and Maintenance for students' acquisition of trade skills in technical colleges in Akwa Ibom.

S/N	ITEMS	Gender	n	$\bar{x}$	SD	df	t	p	Decision
38.	Solder for Electronic	Male Female	46 12	2.69 2.75	.46 .45	56	-0.36	.71	Not Significant
39.	Soldering Gum	Male Female	46 12	1.47 1.50	.50 52	56	-0.13	.89	Not Significant
40.	Heat Sinks	Male Female	46 12	1.56 1.75	.50 .45	56	-1.15	.25	Not Significant
41.	Electrical Tape	Male	46	1.80	.40	56	0.40	.68	Not Significant

		Female	12	1.75	.45				
42.	Sand Paper	Male Female	46 12	2.58 2.75	.71 .45	56	-0.74	.45	Not Significant
43.	Screws	Male Female	46 12	2.45 3.00	.62 .00	56	-3.00	.00	Significant
44.	Assorted Resistors	Male Female	46 12	2.91 2.75	.69 .45	56	0.77	.44	Not Significant
45.	Tweeters	Male Female	46 12	1.58 1.50	.49 .52	56	0.53	.59	Not Significant
46.	Inductors	Male Female	46 12	1.76 1.75	.43 .45	56	0.07	.93	Not Significant
47.	Assorted Capacitors	Male Female	46 12	3.10 3.50	.70 52	56	-1.79	.07	Not Significant
48.	Transistors	Male Female	46 12	2.78 2.75	.41 .45	56	0.23	.81	Not Significant
49.	Transformers	Male Female	46 12	3.04 3.50	.75 .52	56	-1.96	.05	Significant
50.	Switches	Male Female	46 12	2.69 2.75	.46 .45	56	-0.36	.71	Not Significant
51.	Diodes	Male Female	46 12	3.00 3.75	.66 .45	56	-3.67	.00	Significant
52.	Linear Integrated Circuit (IC)	Male Female	46 12	2.82 2.50	.97 .52	56	1.11	.27	Not Significant
53.	IC Sockets	Male Female	46 12	2.84 3.00	.94 .73	56	-0.51	.60	Not Significant
54.	Fuses	Male Female	46 12	1.67 2.00	.79 .73	56	-1.28	.20	Not Significant
55.	Vero Board	Male Female	46 12	3.21 2.75	.66 .86	56	2.03	.04	Significant
56.	Cables/Wires	Male	46	3.23	.63	56	1.11	.26	Not Significant

		Female	12	3.00	.73				

KEY: $\bar{x}$ = Mean Response of NTCIII Students, SD = Standard Deviation, n = Number of Respondents, df = Degree of Freedom, t = Observed t-value, p = Significance (2-tailed)

Table 6 above shows that in most of the items, there was no statistical significant difference between the responses of male and female NTCIII students on the utilization of consumables in Electronics Workshop Practice and Maintenance. Significant difference was observed only in responses on extent of utilization of screws, transformers, diodes and vero boards.

Findings of the Study

The findings of the study were: Only a few equipment and tools were often utilized in Electronics Workshop Practice and Maintenance for students' acquisition of trade skills in technical colleges in Akwa Ibom State. Most consumables were often utilized in Electronics Workshop Practice and Maintenance for students' acquisition of trade skills in technical colleges in Akwa Ibom State. Both male and female NTCIII students shared similar views on the extent of utilization of equipment, tools and consumables in Electronics Workshop Practice and Maintenance for students' acquisition of trade skills in technical colleges in Akwa Ibom State.

Discussion of Findings

The study showed that only a few equipment and tools were often utilized while most consumables were often utilized in Electronics Workshop Practice and Maintenance for students' acquisition of trade skills in technical colleges in Akwa Ibom State. This finding relates with studies by Dahar & Faize (2011) and Ogbu (2015) who noted that there is a great deficiency

In the utilization of instructional facilities in technical colleges. It is imperative to state that only proper utilization of instructional facilities would guarantee effective skill training, thus producing technical college graduates who can secure employment, become self-employed and be able to employ others, or pursue further education in tertiary institutions.

Recommendations

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

- Trainings should be organized for teachers so they could update their skills for effective utilization of instructional facilities in Electronics Workshop Practice and Maintenance.
- Workshops and seminars should be organized on the importance and benefits of utilization of instructional facilities in Electronics Workshop Practice and Maintenance for the teachers by principals of the technical colleges.
- Heads of Trade should carryout regular supervision during practical hours to ensure the effective utilization of instructional facilities for teaching in Electronics Workshop Practice and Maintenance in technical colleges.
- Modern tools and equipment should be adequately supplied and maintained regularly for improving its utilization for of requisite trade skills in electronics workshop practice and maintenance in technical colleges.

References

Aliyu, A. M. (2014). Assessment of Availability and Utilization of Instructional Materials in the Implementation of Nomadic Education Programme in Taraba State, Nigeria. Unpublished M.Ed Thesis, Zaria, Ahmadu Bello University, Nigeria.

Akpabio, M. E. and Ogiriki, I. B. (2017). Teachers use of Information and Communication Technology (ICT) in Teaching English language in Senior Secondary Schools in

Akwa Ibom State. Equatorial Journal of Education and Curriculum Studies, 2 (2): 28-33.

Bello, H. and Shu'aibu, B. (2013). State of Facilities for Teaching Electrical Installation and Maintenance Work Trade in Technical Colleges in Bauchi State, Nigeria. *International Journal of Vocational and Technical Education*, 5(5), 82-91. http://www.academicjournals.org/IJVTE

Dahar, M. A. and Faize, F. A. (2011). Effect of the Availability and the use of Instructional Materials on Academic Performance of Students in Punjab (Pakistan). Middle Eastern Finance and Economic Issue 11.

Eze, O. C. (2015). Enhancing the Use of Instructional Facilities in Technical Colleges for Qualitative Skills Acquisition in Nigeria. *Information and Knowledge Management*, 5(10), 88-92.

Federal Ministry of Education (2012). Senior Secondary School Trade Curriculum for Radio, Television and Electronics Work. Nigerian Educational Research and Development Council Publishers, Sheda, Abuja.

Federal Republic of Nigeria (2013). *National policy on education: 6th edition*, Yaba, Lagos-Nigeria. Nigerian Educational Research and Development Council Publishers.

Gujjar, A. A., Khan, N., Baig, M. N., Ramzan, M., and Saifi S. (2010). A Study to Evaluate the Availability and Utilization of Physical and Instructional Facilities in Secondary Schools of Bajaur Agency (Pakistan). *International Online Journal of Educational Sciences*, 2(3), 688-701. www.iojes.net.

Henry, E. B., Echa, E. A. and Alfred, M. A. (2017). The importance and challenges of biometric machine in school supervision. A case study of Access High School, Calabar. Equatorial Journal of Education and Curriculum Studies, 2 (2): 34- 39.

Kelani, R. A. (2007). Assessment of the Adequacy and Utilization of Woodwork Equipment for Acquisition in Technical Colleges in Lagos and Ogun States. Unpublished M.Ed Thesis, Nsukka, University of Nigeria, Nigeria.

Ogbu, J. E. (2015). Availability and Utilization of Instructional Facilities for the Teaching of Basic Electricity in Ebonyi State Technical Colleges. *Developing Country Studies*, 5(21), 162-168. ISSN 2224-607X (Paper), ISSN 2225-0565 (Online), www.iiste.org

Okobia, E. O. (2011). Availability and Teachers' Use of Instructional Materials and Resources in the Implementation of Social Studies in Junior Secondary Schools in Edo State, Nigeria. *Canadian Center of Science and Education,* Review of European Studies, 3(2), 90-97. www.ccsenet.org/res

Olagunju, A. M. and Abiona, O. F. (2008). Production and utilization of resources in biology education. A case study of South West Nigeria secondary schools. *International Journal of African & African American studies*. 7(2), 49-56.

Prosser, C. A. & Quigley, T. H (1949). Vocational Education in a Democracy: American Technical Society, Chicago, Illinois.

State Technical Schools Board (2017). Demographic Information on Radio, Television and Electronics Work Department of Technical Colleges in Akwa State, Akwa Ibom State Government. AD/STSB/AD/198/VOL.1/85.

Ugwuanyi, J. I. (2013). Availability, Adequacy and Utilization of Resources for Effective

Teaching of Physical Education in Secondary Schools in Enugu State. Unpublished M.Ed Thesis, Nsukka, University of Nigeria, Nigeria.

Umar, I. Y., and Ma'aji, A. S., (2010). Repositioning the Facilities in Technical College Workshops for Efficiency: A Case Study of North Central Nigeria, *Journal of Stem Teacher Education.* 47(3), 63-85.

Uwaifo, V. O. (2009). Attaining Standards in Technology Education in Nigeria Universities Through Effective Utilization of Physical Facilities. *International NGO Journal,* 4(4), 146-159.

Uzoagulu, E. U. (2011). Practical Guide to Writing Research Project Reports in Tertiary Institutions: Cheston Ltd., Enugu, Nigeria.