Faculty of Natural and Applied Sciences Journal of Basic and Environmental Research
Print ISSN: 3026-8184 e-ISSN 3043-6338
www.fnasjournals.com
Volume 2; Issue 4; December 2025; Page No. 85-94
DOI: https://doi.org/10.63561/jber.v2i4.1043

Assessment of Capacity-Building Modules for Students of Electrical Installation Works and Maintenance in Craft Development Centres in Rivers State

***Nwiku, B.B.**
Department of Technical Education, Faculty of vocational/ Technical Education Ignatius Ajuru University of Education, Port Harcourt, Rivers State, Nigeria

***Corresponding author email**: nwikubarinaadaa@gmail.com

Abstract
The aim of this study was to assess capacity building module for students of electrical installation works and maintenance in craft development Centres in Rivers State. The study adopted research & development design. The population of the study comprised of 32 teachers and 21 instructors. The entire population was used without sampling because it was considered manageable. Seven research questions were asked and seven null hypotheses were formulated and tested. The instrument used for data collection was a structured questionnaire which was validated by two experts in the Department of Technical Education of the Ignatius Ajuru University of education and Rivers State University respectively. A reliability coefficient of 0.75 was obtained using Cronbach Alpha reliability Coefficient method. The data collected were analyzed using mean and standard deviation, while t-test statistical tool was used to test the hypotheses at 0.05 level of significance. The result of the study shows that the respondents agreed to all the variables but has separate opinion on the last variable (method of evaluation). The researcher found among others, that the existing capacity building module in craft development centres are inadequate and are not uniform across schools in the State. And therefore, recommended among others that Ministry of labour and productivity and similar examination bodies should consider using the newly electrical installation works and maintenance craft module in assessing practical competence of students' performance again Rivers State government should take over funding of craft development centres to enhance smooth running of program

Keywords: Capacity building, Assessment, Module, Electrical installation, Maintenance

Introduction

Craft development centres are study centres where pre-vocational training are offered to students at the junior secondary level, designed to prepare individuals to acquired practical skills, basic and scientific knowledge and attitude required as craft men and technician at sub-professional level. The pre-vocational stage of occupational preparation enables the students to explore a number of occupations before making a choice of a vocation. The students is allowed to explore many occupational areas and eventually chooses one in which he would later attempt to develop full vocational skills. Pre-vocational courses can be offered in wood work, technical drawing, basic electricity, electronics, typewriting, shorthand, accounting, home management, textiles and clothing and agriculture. (Ogundu 2023)

Electrical installation works is one of the technical courses offered in the craft development centers in Rivers States. .The objective of electrical installation work is to give training and impart needed skills to craft development centers students in that option to enable them, secure employment in recognized organization or become self-reliant economically. Electrical installation work also equips an individual with foundation and saleable skills, knowledge and attitude or value that would enable them operate in rendering service in electrical related institution or work.

Cite this article as:
Nwiku, B.B. (2025). Assessment of capacity-building modules for students of electrical installation works and maintenance in craft development centres in Rivers State. *FNAS Journal of Basic and Environmental Research, 2*(4), 85-94. https://doi.org/10.63561/jber.v2i4.1043

Consequently, the goals of electrical installation works is to empower individual with desirable skills knowledge and values to perform specific function in electrical installation areas so as to
Become self-reliant after graduation and to empower individual in such a manner that will develop his intellectual capacities and help him to make informed decision in all aspects of life as well as to enable the graduate at the level desire to acquire higher vocational training and up skill his occupation (Njoku, 2018). Presently, Electrical installation trade programme in craft development centres equip her graduate potential with requisite skills to propel them contribute meaningfully to the national economic development and making them self-reliant in particular..

If electrical installation trade instruction is efficiently executed through quality teaching and supervision, it would undoubtedly equip students with skills and competence to become self-reliant and contribute to economic development while reducing poverty in the society. Electrical installation trade graduate with sound competences and skills will command salaries or fund measurable with such skill that would give rise to enviable capacity building. The major problem facing electrical installation work and maintenance graduate in the state is lack of employment. Glickerman (2012) observed that education industry produces graduates annually beyond what labour market can absorb thereby putting many electrical installation trade graduates at tight corners on how to live and find for themselves. Lack of requisite skills of graduates could also cause unemployment or underemployment. Ezegbe (2012) attributed poor acquisition of employable skills to poor instructional supervision by personnel concerned, thus, the lack of these skills coupled with limited employment opportunities in the labour market give rise to high unemployment level in Nigeria. Again, effective teaching methods and poor supervision of electrical installation trade in technical colleges have failed to produce students with needed skills for self-reliance and to demonstrate credibility in labour market (Aina, 2011). Capacity building is the process of shaping behavior and attitudes, imparting knowledge and developing skills while maximizing the benefits of participation, with respect to normal formative instructional supervision that embraces growth and changes, respect, criticism or coerced to learn in regimented way {Blasé & blasé 2013). In another development, Glickman (2012) asserted that there are three basic types of supervision, namely: directive, non-directive supervision considers teaching as consisting of technical skills with known standards and competence for all teachers to be effective. The role of the teacher is to inform, direct model and asses those requisite competence. This type of supervision is better applied to learners who need more guidance and counseling. In non-directional supervision learning is based on private exercise and learners must possess that ability to conduct themselves in such a way that through self-reflection they can improve their learning. Hence, for effectiveness, a module must be designed to enhance performanceas explained by Olaitan (2013) is a unit of related skills arranged sequentially to be used in teaching a group of learners within a given time. In the other hand lend themselves to training periods, (Onuka, 2016). In using modules, training objectives, content and methodology are represented at a glance in a concise form, the trainer and trainee to ensure that they are participating effectively in the training programme. A module is also seen as a body of knowledge and skills capable of being utilized on its own or as a foundation or pre-requisite knowledge for more advanced work in the same or other fields of study .Each unit when successfully completed, can be used for employment or self-reliant purposes. The high rate of crimes in our local communities are of the increase daily, meanwhile job opportunities are scarce. This is because unemployed graduates (youths) are scattered all over the country, thereby causing problems in the communities and the society at large. Ordu (2015) Observed that idleness and lack of job on the part of the youths is a major reason for restiveness in our localities. Puyate (2012) saw the craft development centres established in response to the immediate needs of craftsmen and artisans of which the state could only provide 7.5 percent of its needs. He maintained that craft development centers were industry oriented to produce masons, plumbers, fitters, electricians, motor mechanics etc. in course of 6 to 24 months duration. He further added that opportunities were to be made available in the craft development centers for gifted and talented students to be developed for direct entry into appropriate classes in the junior and senior technical colleges.

However, there were tremendous improvement in the operation of craft development centers where craftsmanship certificate (trade test) were issued at the completion of three years before enrolling into vocation 1, 2 and 3 in the government technical colleges (GTC). After prioritizing learners' needs and choosing the goals, the content of curriculum is another element which needs to be chosen, designed and developed. The first step to achieve the goals is the selection of suitable educational content (Maleki, 2018). Therefore, in order to choose the suitable content and present the appropriate criteria for its development, we need to know the content. There are so many different definitions of content which some of them are as follows: The content of curriculum refers to particular facts, opinions, principles and issues which are included in a particular subject matter. The content of a subject matter includes

Cite this article as:
Nwiku, B.B. (2025). Assessment of capacity-building modules for students of electrical installation works and maintenance in craft development centres in Rivers State. *FNAS Journal of Basic and Environmental Research, 2*(4), 85-94. https://doi.org/10.63561/jber.v2i4.1043

organized knowledge, terms, information, facts, rules, principles, methods, concepts, decisions, phenomena and the issues related to the same subject matter. To select the content, its subject matter and goals need to be determined so that we can choose the suitable content based on the goals and related subject.

Consequently, craft development centres are expected to have well equipped workshop with relevant training facilities. Well-equipped workshop offer opportunities for practical training of students in skill acquisition in their technical and vocational trade areas for future development of the key sectors of the economy. Training facilities for teaching technical/vocational programme are all the practical and skill development resources that would facilitate the process of teaching, learning and evaluation of technical/vocational skills. Therefore, training facilities in any industrial unit programme should include machines, equipment, tools, supplies and workshop building. Availability of appropriate facilities enhances students' learning by allowing them to be involved in demonstrations and practice in building their skills. To achieve these, relevant teaching methods are used to impart knowledge to students, they are the means by which the teacher attempts to impart the desired learning or experience (Ndirangu, 2017). The choice of a particular method of teaching by the teacher is determined by a number of factors which include the content to be taught, the objectives which the teacher plans to achieve availability of teaching and learning resources and the ability and willingness of the teacher to improvise if convectional teaching aids are not available, evaluation and follow-up activities and individual learner differences (Ndirangu, 2017), Evaluation refers to a judgment which can be justified according to specific weighted set goals, yielding either comparative or numerical ratings. Assessment is an ongoing process aimed at understanding and improving student learning. It involves making expectations explicit and public, setting appropriate criteria and high standards for learning quality. Systematically gathering, analyzing, and interpreting evidence to determine how well performance matches those expectations and standards, and using the resulting information to document, explain, and improve performance. Therefore, educational assessments can serve a variety of purposes, and the choice of assessment depends in part on how the assessment information would be used. Though, the existing curriculum in the craft development centers is inadequate and cannot measure the current economic situation in Nigeria. It lacks well defined objectives and content to be achieved at the end of the instruction. Teachers to student's activities are not stated. More so, teaching and learning materials are not also visible as well as method of evaluation. The existing curriculum is in the form of scheme of work which differs from school to schools. Consequences to this have been a major concern to the researcher and as such seek to assess a module for capacity building in electrical installation work and maintenance in craft development centres in Rivers State.

Statement of the Problems

Craft development programme is practically oriented skill education, which is seriously furnished for the purpose of skill acquisition which will lead to employment and self-reliance, but over the years, teaching and learning of electrical installation works and maintenance is based on outdated scheme of work at various craft development centers in the 23 local government area of Rivers State. The inadequacy of the basic curriculum which lacks uniformity poses a serious challenge for the achievement of the objectives of the process of teaching and learning in craft development centers and manpower development. Therefore, the curriculum in these craft development centers lack basic elements such as the objectives and content to be achieved which are viable tool for national development. Again, there is an absence of teachers to students activities that characterize the action of the teachers and students during teaching and learning. More so, the training facilities are also lacking. Most especially, the method of evaluation was not captured to determine whether or not students achieved the set objectives Thus, the researcher faulted our current economic situation and lack of employment opportunities to school leavers after graduation to inadequate curriculum. He further stated that a curriculum in the craft development centers should have utilitarian value; that is, the curriculum should have ingredient that would prepare the students directly into industry or be self-employed at the end of their programme. However, till present it has been difficult to find an adequate curriculum which can fill this gap in Rivers State. This situation is presumed to be one of the reasons youths roaming the street due to lack of job and skills to be self-employed has resulted in youth restiveness in the form of social-vices such as kidnapping, armed robbery, fraud, cultism, terrorism, armed insurgence and among others (Okwelle 2013). The consequences of lack of developed curriculum has been a major concern to the researcher, Hence the suggestion to assess a module for capacity building in electrical installation works and maintenance in craft development centres in Rivers State.

Cite this article as:
Nwiku, B.B. (2025). Assessment of capacity-building modules for students of electrical installation works and maintenance in craft development centres in Rivers State. *FNAS Journal of Basic and Environmental Research, 2*(4), 85-94. https://doi.org/10.63561/jber.v2i4.1043

Purpose of the study

The aim of the study was to assess capacity building module for students of electrical installation works and maintenance in craft development centres in Rivers State. Specifically, the study sought to:

1. Determine the objective of the capacity building module for students of electrical installation works and maintenance in craft development centres in Rivers State.
2. Determine the training facilities in electrical installation work and maintenance for craft development centres in Rivers State.

Research Questions

The following research questions were drawn up to guide the study.

1. What are the objectives of the capacity building module for students of electrical installation work and maintenance in craft development centres in Rivers State?
2. What are the training facilities in electrical installation work and maintenance in craft development centres in Rivers State

Hypotheses

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

HO_1 There is no significant difference between the mean responses of teachers and instructors of electrical installation on the objectives of capacity building module for students of electrical installation work and maintenance in craft development centres

HO_2 There is no significant difference between the mean responses of teachers and instructors of electrical installation on the training facilities in electrical installation works and maintenance in craft development centres

Methodology

The study made use of research and development (R&D) design of 5 steps simplification by Buchori and Setyawati (2015) on a learning model of character education through e-comic. The steps are: problem analysis, design, realization / construction, implementation and evaluation.

The population of the study is 53, which comprises of 32 electrical teachers and 21 electrical instructors of craft development centers in six major towns in Rivers State, namely; Port Harcourt, Ahoada, Bonny, Bori, Eleme and Etche. The teachers and instructors were considered to form the population of the study because they are experts in electrical installation works and maintenance.

All the 23 electrical teachers and 21 instructors were used in the study without sampling because their population size was considered manageable.

The instrument used for data collection was self-structure questionnaire. Tagged, development of capacity building module for students of electrical installation works and maintenance in craft development centers (ACBMSEIWMCDC). The instrument contains 424 items questionnaire with response options of Strongly Agree (SA), Agree (A), Disagree (D), and Strongly Disagree (SD) which is designed in the pattern of 4 point rating scale of agreement with numerical values of 4, 3, 2 and 1 respectively.

The research instrument was face validated by the researcher's supervisor and two experts from Department of Vocational and Technical Education Ignatius Ajuru University of Education, Port Harcourt and Rivers State University respectively.

The module was subjected to test of reliability using Cronbach Alpha reliability Coefficient method. This was achieved through purposive sampling of 20 electrical teachers and instructors in Government Technical College port Harcourt and a reliability coefficient of 0.75 was established.

The questionnaire was administered to the electrical teachers and electrical instructors directly by the researcher and three persons who were trained to be research assistants. The copies of the instrument were retrieved 15 days after administration.

Data collected were analyzed descriptively using mean and standard deviation while t-test was used to test the hypotheses at 0.05 level of significance. Decision was made based on a criterion mean value of 2.50. It showed that mean value equal or more than the criterion mean is accepted as positive response, otherwise

Cite this article as:
Nwiku, B.B. (2025). Assessment of capacity-building modules for students of electrical installation works and maintenance in craft development centres in Rivers State. *FNAS Journal of Basic and Environmental Research, 2*(4), 85-94. https://doi.org/10.63561/jber.v2i4.1043

rejected as negative response. Statistical package for the social science (SPSS) version 20.0 was used in analyses.

Results

Research Question 1: What are the Objectives of capacity building module for students of electrical installation works and maintenance in craft development centres in Rivers State?

Table 1: Mean Response of the Respondents on What are the training facilities in electrical installation work and maintenance in craft development centres in Rivers State

Objectives of capacity building module

		Teachers			Instructors		
	Objectives :	**Mean**	**SD**	**RMK**	**Mean**	**SD**	**RMK**
1	State principles of Basic Electricity	4.59	.62	A	4.64	.49	A
2	State types of Domestic Installation	4.27	.76	A	4.08	1.04	A
3	Define Industrial Installation and Electric Motors	4.16	.71	A	3.96	1.02	A
4	Carry out Cable Jointing	4.09	.96	A	4.04	.89	A
5	State various method of Battery Charging and Repairs	4.18	.92	A	4.16	.94	A
6	Define Winding of Electrical Machines	4.16	.89	A	4.16	.75	A
7	Define Solid State Devices and Circuits	4.30	.98	A	4.08	1.00	A
8	Read Electrical/Electronics Drawing	4.05	.94	A	3.96	1.02	A
9	State safety rules and regulations in electrical installation work and maintenance	4.41	.73	A	4.00	.96	A
10	Carry out surface and advance industrial wiring.	4.00	.92	A	3.92	1.15	A

Data in Table 1 revealed that teachers had a mean range of 4.00-4.59 and standard deviation of 0.62-0.99 while instructors had a mean range of 3.92-4.64 and standard deviation of 0.049-1.08. The closeness showed the homogeneity of the respondents. The mean showed that the respondents agreed on the objectives of the capacity building module to enhance students' performance in electrical installation works and maintenance in craft development centres in Rivers State

Researh Question 2. What are the training facilities in electrical installation work and maintenance in craft development centres in Rivers State

Table 2. Mean Response of the Respondents on training facilities in electrical installation work and maintenance

		Teachers			Instructors		
S/N	**Ability to:**	**Mean**	**SD**	**RMK**	**Mean**	**SD**	**RMK**
1.	Work bench	4.60	.49	A	4.59	.50	A
2.	Cross Arm	4.70	1.89	A	4.38	.49	A
3.	Conduit bending machine	4.50	.52	A	4.56	.50	A
4.	Spindle	4.42	.50	A	4.35	.49	A
5.	Marine Rope	4.54	.48	A	4.65	.66	A
6.	Winding machine	4.70	.60	A	4.79	.60	A
7.	Battery charger	4.70	.46	A	4.79	.41	A
8.	Wiring boards	4.79	.46	A	4.76	.43	A
9.	Ladder	4.76	.41	A	4.85	.36	A
10.	Blow lamp	4.50	.45	A	4.79	.41	A
11.	Pot and Ladle	4.47	.50	A	4.35	.49	A
12.	Goggle	4.46	.52	A	4.62	.49	A

Cite this article as:
Nwiku, B.B. (2025). Assessment of capacity-building modules for students of electrical installation works and maintenance in craft development centres in Rivers State. *FNAS Journal of Basic and Environmental Research, 2*(4), 85-94. https://doi.org/10.63561/jber.v2i4.1043

13.	Soldering iron	4.57	.54	A	4.79	.49	A
14.	Soldering bit	4.63	.54	A	4.53	.41	A
15.	Hand gloves	4.75	.49	A	4.76	.51	A
16.	First aid box	4.72	.60	A	4.82	.60	A
17.	Overalls	4.61	.46	A	4.71	.41	A
18.	Transformers (various)	4.57	.46	A	4.53	.43	A
19.	D.C Motor	4.43	.41	A	4.53	.36	A
20.	A.C. Motor (1- phase)	4.36	.45	A	4.32	.41	A
21.	A.C. Motor (3- phase)	4.42	.50	A	4.53	.49	A
22.	D.C generator	4.54	.52	A	4.44	.49	A
23.	A.C. Generator (1- phase)	4.42	.54	A	4.50	.49	A
24.	A.C Generator (3 Phase)	4.70	.44	A	4.53	.47	A
25.	Starters (Direct on Line)	4.55	.54	A	4.51	.48	A
26.	Circuit breaker	4.44	.53	A	4.68	.43	A
27.	**Hand Tools**	4.41	.54	A	4.56	.52	A
28.	Screw driver	4.49	.59	A	4.50	.52	A
29.	Allen keys	4.70	.44	A	4.47	.56	A
30.	Hammers	4.42	.58	A	4.41	.59	A
31.	Pliers	4.49	.50	A	4.50	.51	A
32.	Cutter	4.42	.50	A	4.53	.50	A
33.	Strippers	4.53	.52	A	4.62	.56	A
34.	Mallet	4.74	.44	A	4.82	.39	A
35.	Hack saw	4.71	.46	A	4.71	.46	A
36.	Files	4.65	.54	A	4.76	.50	A
37.	Taps and dies	4.69	.47	A	4.65	.49	A
38.	Drills (Manual)	4.53	.60	A	4.41	.70	A
39.	Drills (Electric)	4.48	.50	A	4.47	.51	A
40.	Reamers	4.53	.50	A	4.62	.49	A
41.	Knives	4.76	.45	A	4.71	.58	A
42.	Raul plug	4.72	.45	A	4.71	.46	A
43.	Gimlet	4.64	.48	A	4.68	.47	A
44.	**Measuring Instruments**						
45.	A.C ammeters (various ranges)	3.61	.615	A	4.47	.743	A
46.	D.C Ammeter (various ranges)	4.39	1.214	A	4.27	1.280	A
47.	D.C Voltmer (various ranges)	4.19	.805	A	3.87	.516	A
48.	A.C Voltmeter (various ranges)	4.16	.828	A	3.93	.884	A
49.	Avometer (various ranges)	4.30	.947	A	4.13	1.125	A
50.	Energy meter (1-phase)	4.66	1.162	A	4.33	1.175	A
51.	Energy meter (3-phase)	3.97	.993	A	4.27	1.033	A
52.	Mega (insulation tester)	4.34	.880	A	3.87	1.060	A
53.	Neon tester	4.20	.876	A	3.93	1.033	A
54.	Oscilloscope	4.00	.000[a]	A	3.60	.000[a]	A
55.	Hydrometer	4.40	.000[a]	A	4.00	.000[a]	A
56.	Measuring tape	4.20	.000[a]	A	3.60	.000[a]	A
57.	Signal generator	4.60	.000[a]	A	4.60	.000[a]	A
58.	Rheostat	4.50	.000[a]	A	4.00	.000[a]	A
59.	Bell and battery	4.00	.000[a]	A	3.70	.000[a]	A
60.	**Consumable Materials**	5.00	.000[a]	A	4.50	.000[a]	A
61.	Ceiling roses	4.00	.000[a]	A	3.60	.000[a]	A
62.	Plugs (assorted)	4.10	.000[a]	A	4.70	.000[a]	A
63.	Adaptors (assorted)	3.54	.623	A	4.47	.640	A
64.	Socket outlet (assorted)	3.84	.937	A	3.73	.704	A
65.	Switches (assorted)	3.50	.815	A	4.40	.828	A

Cite this article as:
Nwiku, B.B. (2025). Assessment of capacity-building modules for students of electrical installation works and maintenance in craft development centres in Rivers State. *FNAS Journal of Basic and Environmental Research, 2*(4), 85-94. https://doi.org/10.63561/jber.v2i4.1043

66.	Fuses (assorted)	3.81	.394	A	3.73	.594	A
67.	Wiring nails	4.41	.720	A	4.13	.915	A
68.	Fluorescent fittings	3.58	.662	A	4.33	.816	A
69.	Clips	3.50	.781	A	4.33	.617	A
70.	Conduit pipes (Galvanized)	4.49	.687	A	4.27	.884	A
71.	Conduit pipes (PVC)	4.49	.667	A	4.07	1.033	A
72.	Soldering lead	3.66	.625	A	3.73	.458	A
73.	Batteries	4.11	.885	A	3.93	.961	A
74.	Cables	3.62	.590	A	3.67	.816	A
75.	Sulphuric acid	4.36	.751	A	4.47	.915	A
76.	Distilled water	4.32	.893	A	3.53	.640	A
77.	Installation vanish	4.42	.740	A	3.60	.632	A
78.	Earth rod	4.46	.725	A	3.87	.352	A
79.	Ceramic insulator	3.50	.726	A	3.73	.458	A
80.	Resistors (assorted)	4.24	.791	A	4.13	.990	A
81.	Capacitors (assorted)	4.31	.720	A	4.27	.704	A
82.	Inductors (assorted)	4.00	.891	A	4.20	.941	A
83.	Lamb holders (assorted)	4.42	.740	A	4.47	.743	A
84.	Work bench			A			A
		4.24	.824		4.40	.632	

Data in table 2. revealed that teachers had a mean range of 4.41-4.79 and standard deviation of 0.41-1.89 while instructors had a mean range of 4.35-4.85 and standard deviation of 0.36-0.70. The closeness showed the homogeneity of the respondents. The mean showed that the respondents agreed that training facilities will enhance students' performance in electrical installation works and maintenance craft practice in craft development centers in Rivers State.

HO_1 There is no significant difference between the mean responses of teachers and instructors of electrical installation on the objectives of capacity building module for students of electrical installation work and maintenance in craft development centers

Table 3: t-Test Analysis on the objectives of capacity building module

Respondents	Mean	SD	N	df	t-cal	t-crit	Decision
Teachers	4.19	0.89	32				
				51	1.41	1.96	Accepted
Instructors	4.10	0.93	21				

Table 3. revealed that t-cal of 1.41 is less than t-crit of 1.96. This indicated that the stated hypothesis was accepted thus there is no significant difference between the mean responses of electrical installation works and maintenance teachers and instructors on the objectives of capacity building module to enhance students' performance in craft development centers in Rivers State.

Cite this article as:
Nwiku, B.B. (2025). Assessment of capacity-building modules for students of electrical installation works and maintenance in craft development centres in Rivers State. *FNAS Journal of Basic and Environmental Research, 2*(4), 85-94. https://doi.org/10.63561/jber.v2i4.1043

HO_2 There is no significant difference between the mean responses of teachers and instructors of electrical installation on the training facilities in electrical installation works and maintenance in craft development centers

Table 4 : t-Test Analysis on the training facilities of capacity building module

Respondents	Mean	SD	N	d.f	t-cal	t-cri	Decision
Teachers	4.07	0.94	32				
				51	-0.44	1.96	Accepted
Instructors	3.99	1.03	21				

Table 4. revealed that t-cal of -0.44 is less than t-crit of 1.96. This indicated that the stated hypothesis was accepted thus there is no significant difference between the mean responses of electrical installation works and maintenance teachers and instructors on the training facilities of capacity building module to enhance students' performance in craft development centers in Rivers State.

Discussion

The findings of the study revealed that the teachers and instructors agreed on the objective of capacity building module for students of electrical installation and maintenance work in craft development centers in Rivers State. Table 4.8 revealed that t-cal of 1.41 is less than t-crit of 1.96. This indicated that the stated hypothesis was accepted thus there is no significant difference between the mean responses of electrical teachers and electrical instructors on the objectives of capacity building module for students of electrical installation work and maintenance in craft development centers. The findings of the study is in line with TESDA Policy Brief (2013) which stated that graduates of the tech- Voc track under K to 12 are expected to be equipped with employable competencies when they exit Grades 10 and 12 through National Certification I and II. That is why; UNESCO-UNEVOC (2004) added that particular attention is given to promoting best practices and innovations in technical and vocational education and training (TVET) and education for the world of work. In this context, Ali, et al. (2010) of UNESCO-IICBA highly emphasized and promoted the role of TVET teachers and trainers in the vocationalization of secondary education to assist in the transition of young people from school to the world of work. The teacher being the most important agent of change in knowledge society should be adept on the need for innovations and quality improvement in training to meet the challenges (Balbin, 2015). In order for the SHS graduates to be skillful and competitive, innovations on technology in the use of instructional materials is necessary. It is in this context that the teacher-trainers' attitude about technological innovation is considerably affecting the curriculum and its handling mechanism. Hence, according to Bajet & Bajet, (2014) one of the innovative outputs in Senior High School modeling is encouraging SHS teachers to conduct action research and develop their own instructional materials to help enrich existing instructional materials. This innovative output will help the teachers to enhance their knowledge, skills, attitude and technology for them to have an output. It is a fact that the efficiency and effectiveness of the teachers in imparting knowledge, skills, attitude and technology is not only by teaching but also by being innovative in the teaching-learning process. In the area of technical vocational training, it is necessary for the teacher to be innovative since there is an important need for the development of knowledge, skills and attitude.

The findings of the study revealed that the teachers and instructors agreed on the training facilities in electrical installation work and module for capacity building of students in electrical installation and maintenance work in craft development centers in Rivers State. Table 4.10 revealed that t-cal of -0.44 is less than t-crit of 1.96. This indicated that the stated hypothesis was accepted thus there is no significant difference between the mean responses of electrical teachers and electrical instructors on the training facilities in electrical installation works and maintenance in craft development centers. The findings of the study is in line with Friestad-Tate, et al. (2014) who found that in many schools in the North-East Geo-political Zone of Nigeria, tools, equipment, classrooms and laboratories were grossly supplied. Consequently, Guido (2014) concluded that many schools in Nigeria experience the non-availability of educational facilities. The finding of this study is further supported by the work of Lim (2016) who found that

Cite this article as:
Nwiku, B.B. (2025). Assessment of capacity-building modules for students of electrical installation works and maintenance in craft development centres in Rivers State. *FNAS Journal of Basic and Environmental Research, 2*(4), 85-94. https://doi.org/10.63561/jber.v2i4.1043

electrical workshop facilities in Vocational Centers and Technical Colleges in Bauchi State were low in supply. On the whole however, the study found that facilities for the programme of Electrical Installation and Maintenance Works in technical colleges in the North-East Geopolitical Zone were moderately available. This finding was supported by the work of Majumbar (2011) who found that electricity, water, lecture rooms, offices and workshops for production work in technical colleges in northern Nigeria were moderately available. This finding is further supported by Rio (2014) who found in their separate works that facilities for many TVET programmes in Nigeria were only moderately available

Conclusion

Based on the research carried out, the assessed capacity building module for students of electrical installation works and maintenance in craft development centres, some practical skills, and tasks associated in electrical installation works and maintenance craft practice was not deemed valid, reliable and appropriate to enhance students' performance in craft development centres. It is expected that teachers in craft development centres may now be able to use the objectives, comprehensive and systematic instrument to effectively assess students' performance in practical works. In so doing, the teachers would be able to show proof of the scores and grades that they award. Furthermore, it is believed that students' practical skill performance would be enhanced in electrical installation works and maintenance craft practice.

Recommendations

Based on the findings of the researcher, the following recommendations are made:

1. 1. The behavioural objectives should be feasible and attainable in terms of the time limit and the maturational level of the learner. It should be presented on sequential order starting with the simple and graduating with the difficult and should be stated in specific terms.
2. Craft development centres should be well equipped with relevant training facilities that will enhance effective teaching and learning.
3. Ministry of labour and productivity and similar examination bodies should consider using the newly electrical installation works and maintenance craft module in assessing practical competence of students' performance at craft development centres and other examinations at post- primary level. This would help to produce graduates who have met standards required of them at the world of work, thus they can fit in easily.
4. All craft development centres should be managed and funded by the Rivers State Government.
5. 5 Craft development program should be accredited by the National board for technical education for a unified curriculum.

References

Aina O. (2011). Business education, technology and national development.*Business education journal,* 5 (2), 70 -71.

Balbin, N. B..(2015). Development of A Multi- IAMURE *International System Automotive Engine Electrical Trainer.Journal of Mathematics, Engineering and Technology*, 11(1). http://ejournals.ph/form/cite.php?id=2855

Blase, J. & Blase J. (2013). Empowering teachers: What successful principals' thousand Oaks. Corrwin Press.

Bajet Jr., M. A. & Bajet, N. A..(2014). Development of Domestic Refrigerator Trainer: An Instructional Material for Beginner Technician. JPAIR Multidisciplinary *Research Journal,* 16(1). http://ejournals.ph/form/cite.php?id=12372thousand Oaks. Corrwin Press.

Ezegbe, C.C. (2012). Towards effective supervision in Nigerian educational system: educational, administration for colleges and universities. Owerri: Tony Ben Publishers.

Friestad-Tate, J., McCoy, C., & Schubert, C., (2014). Understanding Modular Learning-Developing A Strategic Plan to Embrace Change. i-manager's*Journal on School Educational Technology,* Vol. 9 l No. 4 l March-May 2014. https://files.eric.ed.gov/fulltext/EJ1097629.pdf.

Glickman, D.C. (2012). Supervision of instruction: A developmental approach. Boston: Ellyn and Bacon.

Guido, RM., (2014).Evaluation of a Modular Teaching Approach in Materials Science and Engineering.American *Journal of Educational Research*, 2014, Vol. 2, No. 11, 1126-1130.http://pubs.sciepub.com/education/2/11/20

Cite this article as:
Nwiku, B.B. (2025). Assessment of capacity-building modules for students of electrical installation works and maintenance in craft development centres in Rivers State. *FNAS Journal of Basic and Environmental Research, 2*(4), 85-94. https://doi.org/10.63561/jber.v2i4.1043

Lim, EJ., (2016). Effectiveness of Modular Instruction in Word Problem Solving of BEED

Majumbar, S. (2011).New Challenges in TVET Education. UNESCO IICBA Newsletter Vol. 13 No. 2 December, 2011.www.unesco-iicba.org

Maleki, H. (2018). Curriculum Development: Practice Guide. Tehran: Madreseh Publications,

Ndirangu C (2017). Teaching methodology, African Virtual University I Publi New York: Peter Lang.

Njoku, U.C. (2018). Business Education and Value Orientation for national economic empowerment and development.*Business Education* Journal, 6(1), 102-108.

Okwelle, P.C. (2013). Appraisal of Theoretical Models of Psychomotor skills and application to technical vocational education and training (TVET) System in Nigeria, *Journal of Research and Development*, 1(6), 25-35.

Ogundu.I (2023). A slave does not trade in a plantain; an inaugural lecture, series no.44. IAUE. Pearl publishers international ltd.

Olaitan, S.O. (2013). Understanding Curriculum Ndudim, Printing and Publishing Company.

Onuka, A. U. (2016). Work-skill module for improving the employment opportunities of secondary school graduate in poultry occupation in Abia State: Unpublished M.ED Thesis. University of Nigeria Nsukka.

Ordu, P. (2015). Entrepreneurship: Theory, principles and practice, Osia digital Publishers Practice. Oxford University Press.

Pnyate.S.T. and Iheanyi N.O. (2012) problems of education in the 21st century.Volume 45.

Rio, L. (2014). Development and Acceptability of Training Module In Switching Logic. International Journal of Scientific and Research Publications, Volume 4, Issue 10, October 2014 1 ISSN 2250-3153.Retrieved from http://www.ijsrp.org/research-paper-1014/ijsrp-p3432.pdf.

Cite this article as:

Nwiku, B.B. (2025). Assessment of capacity-building modules for students of electrical installation works and maintenance in craft development centres in Rivers State. *FNAS Journal of Basic and Environmental Research, 2*(4), 85-94. https://doi.org/10.63561/jber.v2i4.1043