Journal of Education and Practice
ISSN 2222-1735 (Paper) ISSN 2222-288X (Online)
Vol.8, No.17, 2017

Assessment of Technical Skills Competency Needs of Electrical Installation and Maintenance Work Trade Teachers in Skills Acquisition Centres of Yobe State

Dr. Mbaga Emmanuel Vandi[1] Quahha David Wampana[1] Babayo Aliyu Shanga[2]
1.Dept. of Electrical Technology Education, School of Technology and Science Education,
Modibbo Adama University of Technology Yola, Nigeria
2.Dept. of Electrical/Electronics, School of Technical Education,
Federal College of Education (Technical) Potiskum

Abstract
Yobe state Skills acquisition centre is a one year training programme designed to produce technical skilled manpower at craft level that should either take up job opportunities in public and private sector or be self-employed. The entry requirement for the skills acquisition centres is any o'level general certificate of education. For the programme to be successful, the teachers need to be technically competent. Therefore, this paper intends to assess the technical skills competency needs of electrical installation and maintenance work trade teachers teaching in the skills acquisition centres of Yobe State. Three research questions and three hypotheses was formulated to guide the study. The assessment was based on the NABTEB module of electrical installation and maintenance work trade. Descriptive survey research design was adopted for the study. Questionnaires titled "Technical Competency Needs of Electrical Installation and Maintenance Work Teachers in Skills acquisition centres" was developed by the researcher and used for the data collection. The instrument was administered to twenty eight (28) electrical installation and maintenance work trade teachers in the centres. The results showed that majority of the respondents believed that they needed technical competency retraining in all the trade module of electrical installation and maintenance work. The study recommended that teachers in the trade centres should go for retraining in order to impart employable skills to the trainees.
Keywords: acquisition, competency, skills, teachers, technical, trade

1. Introduction

Skills acquisition programme in Yobe state is a one year single modular training programme that uses National Business and Technical Education based curriculum. The objective of the programme is to impart the necessary occupational skills and knowledge in various trades required by the students for self- reliance after graduation (National Directorate of Employment, [1]. Moreover, electrical installation and maintenance work trade is one of the trades offered in the skills acquisition centres. In addition, to examining the students for the acquisition of occupational skills competency, students are taught some component subjects such as English, Mathematics, etc. but are not included in their final examination. Hence, they do single-modular National Business Technical Examination Board (NABTEB) Examination, which often conducted in December.

The success of students to realize the objective of Skills acquisition centres largely depends on the quality of their teachers who teach and impart skills. Hence, teacher needs to play a crucial role in achieving academic objectives. This is supported by the National policy on Education which states that no education system can rise above the quality of its teachers Federal Republic of Nigeria (FRN) [2]. Therefore, the effectiveness or ineffectiveness of teaching is highly linked to teacher competence. Subtly, the effectiveness of all educational programmes is dependent largely on the devotion and competency of teachers who constitute in the educational system [3].

Competency is the ability to perform a particular task properly [4]. This is supported by James [5], which states that competency is a cluster of related knowledge, skills, abilities that affects a major part of one's job that can be measured against well-accepted standards. Competency can be improved via training and development. Therefore, competency of technical persons with executive function shall be verified and attributed on the basis of evidence that the person has the necessary skills required for the scope of work (including practical skills where appropriate), can act competently across the specified range of activities, and has the relevant knowledge and understanding of the underpinning competency [5].

Teachers' competency is the ability of the teacher to impart the relevant skills, knowledge and methods consistently over time to meet the expected performance of students [6]. There are two aspects of teacher's competence, as posited by [6], the competency in the subject area and the pedagogical competency; the application of methods relevant to effectively participate in the classroom is the pedagogical competency, while the essential skills and knowledge found in the subject area is the technical competency. Kenneth [7] further stressed that the content knowledge which refers to one's understanding of the subject matter, is a technical competency. While, pedagogical competency is knowledge of one understands of teaching and learning

processes independent of subject matter. In the same vein, Golebniak [8] stressed that two competency exist in teacher's ability: technical and pedagogical competency. Technical competency donate a set of trainable skills and abilities which make a teacher effective in performing a tasks in the content of his subject; pedagogical competency donate developing student's understanding through instructional strategies that are appropriate to the subject matter. However, this study is on the technical skills competency aspect.

The technical skills competency possessed by technical or trade teachers enables the teacher to prepare individuals for occupation and useful living in the society. Teachers without proper grasp of the subject area is more than a waste of time because the end result can only be the effective spread of ignorance [3]. It is obvious that competent technical teachers lead the implementation of vocational training programme in their trades contained in the National Business and Technical Examination Board, NABTEB. The electrical installation and maintenance work trade curriculum have three certifiable modules, namely;

(i) Domestic electrical installation and maintenance
(ii) Industrial electrical installation and maintenance
(iii) Rewinding of electrical machines [9].

Acquisition of technical skills in electrical installation and maintenance work can only be effective if technical teachers in the trade are competent and knowledgeable in both theory and practical. Student's quickly loose respect and confidence in the teacher who is ineptitude at the trade or occupation he professes to teach. Thus, electrical installation and maintenance work trade technical teachers have to show mastery in both theory and practice of the trade. Teachers of Electrical installation and maintenance work trade in skills acquisition centres have varying qualifications, depending on their training, some are graduates with their first degree or Higher National Diploma (HND) and others are non-graduates. Therefore, for Electrical installation and maintenance work teachers to have a consistent technical competency, despite their varying qualification and training, they must be refreshing and updating their knowledge and skills in their subject matter.

The existence of staff development programme for the improvement of teaching force is imperative, but such programmes should be specifically related to the instructional objectives [10]. Unfortunately, these programmes are often provided without first identifying the needs of the teachers [11].The way of identifying the competency needs of teachers is called Needs Assessment. This Needs Assessment is a systematic way of identifying educational deficiencies or problems. It focuses not only on solutions for a specific problem or a way to solve a problem but also to identify educational problem areas [12]. The importance of technical competency needs of teachers derived from the needs of teachers, brought about by the curriculum change, advances in substantive knowledge and development of new instructional facilities, which combine to a complex, planned of technical competency needs. The skills and ability of administrative and instructional personnel in education institutions determine to a large extent the quality of the programmes offered [13]. Therefore, electrical installation and maintenance work trade can be effectively imparted at the skills acquisition centres, if teacher's technical competency needs are identified with a view to providing appropriate solution for the teachers (graduates and non-graduates) in mastering of their subject matter.

One of the objectives of technical education is to provide the technical knowledge and vocational skills necessary for economic development. This will in turn prepare youths for self-reliance. This is supported by the Federal Republic of Nigeria [2] which stated that the objective of technical education is to provide technical training and impart the necessary skills leading to the production of skilled personnel who will be enterprising and self-reliant. To this end, skills acquisition centres are aimed at training individuals in various skills required for self-reliance.

However, despite the imperative of producing skilled and competent personnel for economic development, the electrical installation and maintenance work trade technical teachers seem lagging in capitulating their subject matter in teaching students the trade. As observed by Sani [14], that there is less skills in subject area by electrical installation and maintenance work technical teachers teaching in skills acquisition centres in Yobe State. The inability of many teachers to effectively impart the subject area to students is partly due to deficiencies in teachers' technical skills competency. Therefore, there is obviously needs to identify the needs of those teachers in their subject area, in order to trace their areas of needs and weaknesses and to suggest ways of providing their needs for effective teaching of their students. However, if the technical teachers' deficiencies are left to unidentified, it will undermine the students' skills acquisition in electrical installation and maintenance work trade and will hamper the achievement of the objective of skills acquisition centres' training programmes.

2. Research Questions

The following research questions were raised for the purpose of this study.

1. What are the Domestic Electrical Installation module technical skills competency needs of teachers of electrical installation and Maintenance work trade?
2. What are the Domestic Industrial Electrical Installation module technical skills competency needs of

teachers of electrical installation and Maintenance work trade?

3. What are the Rewinding of Electrical Machine module technical skills competency needs of teachers of electrical installation and Maintenance work trade?

3. Hypotheses

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

Ho_1: There is no significant difference between the mean responses of graduate teachers and non-graduate teachers on technical skills competency needs for effective teaching of Domestic electrical installation module.

Ho_2: There is no significant difference between the mean responses of graduate teachers and non-graduate teachers technical skills competency needs for effective teaching of Industrial electrical installation module.

Ho_3: There is no significant difference between the mean responses of graduate teachers and non-graduate teachers technical skills competency needs for effective teaching of teaching of Rewinding of electrical machine module.

4. Methodology

Descriptive survey research design was adopted for the study using assessment approach to gather data on teachers technical kills competency needs**.** The population of this study consists of all the 28 electrical installation trade technical teachers in skills acquisition centres of Yobe State. This consists of 11 graduate teachers and 17 non-graduate teachers in all the 11 skills acquisition centres. Because of the small size of the population, the entire population was considered for the study, and therefore there was no sample and sampling technique for the study.

The instrument used for data collection was a structured questionnaire that was developed by the researchers. The instrument was titled “Technical Competency Needs of Electrical Installation and Maintenance Work Teachers in Skills acquisition centres” (TECON). The instrument consisted of 70 items that provide answers to the research questions formulated. A four points rating scale instrument was used to collect data on from the respondents. The data collected was analyzed using the statistical package for social sciences (SPSS) to compute the mean and standard deviation used to answer the research questions. The hypotheses were tested using t-test at 0.05 level of significance.

Research question 1: What are the Domestic Electrical Installation module competency needs of teachers of electrical installation and Maintenance work trade?

Table 1: Mean and Standard Deviation of Responses of Teachers on Domestic Electrical Installation module Competencies Needs

S/N	Competency in domestic electrical	$\overline{X}$	SD	Remark
1	Identify common sources of hazard in domestic electrical installation	3.86	0.36	needed
2	State ways of preventing hazard in domestic electrical installation	3.57	0.54	Needed
3	Use safety equipment essential for domestic installation	3.50	0.69	Needed
4	Follow appropriate procedures in the event of a workshop accident	3.61	0.69	Needed
5	Apply statutory safety regulation for properties and environment	3.36	0.68	Needed
6	Identify electric accessories on working drawing	3.21	0.74	Needed
7	Install the electrical accessories as indicated on the working drawing	3.12	0.83	Needed
8	Identify common type of protective devices	3.61	0.57	Needed
9	Install circuit breaker and fuses in electrical installation	3.71	0.53	Needed
10	Determine current rating of fuses in electrical installation	3.29	0.71	Needed
11	Visually detect electrical losses connation	3.11	0.88	Needed
12	Determine the cable size to be used for electrical current	3.57	0.57	Needed
13	Select appropriate wiring tools type of the building	3.54	0.58	Needed
14	Explain the concept of surface wiring	3.21	0.69	Needed
15	Use surface wiring tools appropriate	3.40	0.57	Needed
16	Carry out simple surface wiring of domestic building	3.25	0.70	Needed
17	Apply the IEE regulation on electrical domestic surface wiring	3.36	0.83	Needed
18	Explain the meaning of conduit	3.14	0.93	Needed
19	Identify types of conduct; flexible, steel, and pvc conduits	3.21	0.63	Needed
20	Apply stock and die, hacksaw in conduit installation	2.93	0.77	Needed
21	Apply appropriate procedure for preparing conduit installation work	3.14	0.93	Needed
22	Select appropriate for conduit wiring tools	3.46	0.51	Needed
23	Explain the three types of electrical installation test	2.90	0.95	Needed
24	Carry out simple conduit wiring for a domestic wiring	3.29	0.76	Needed
25	Draw a cable using a fish wire in conduit installation	3.00	0.94	Needed
26	Carry out continuity test of a conduit wiring system	3.12	0.74	Needed
27	Carry out polarity test of a conduit wiring system	3.00	0.94	Needed
28	Carry out earth leakage test of a conduct wiring	3.23	0.71	Needed
29	Identify tools used for cable jointing termination	3.14	0.76	Needed
30	Identify primary cells	2.96	0.88	Needed
31	Identify secondary cell	2.89	0.79	Needed
32	Explain the working principals on the primary cell	2.75	0.80	Needed
33	Identify tools used for battery charging	2.96	0.47	Needed
34	Identify equipment used in battery charging	2.89	0.47	Needed
35	Prepare electrolyte for battery charging	3.07	0.98	Needed
36	Determine specific gravity of electrolyte	2.75	0.96	Needed
37	Determine charging conditions of a battery	2.79	0.83	Needed
38	Determine discharging conditions of a battery	2.93	0.94	Needed

Grand mean (μ) = 3.20

Result presented in Table 1 shows the responses on competency needed in teaching domestic electrical installation. Teachers of domestic electrical installation indicated that they needed in the entire technical competencies. The table revealed that all of the 38 technical competency items have a mean rating in the range of 2.75 to 3.46 which is above the decision point of 2.50 and a grand mean of 3.20. The teachers perceived they needed technical competency in all the items of domestic electrical installation.

Research question 2: What are the Domestic Industrial Electrical Installation module competencies needs of teachers of electrical installation and Maintenance work trade?

Table 2: Mean and Standard Deviation of Responses of Teachers on Industrial Electrical Installation module Competencies Needs

S/N	Competency in industrial electrical installation ability:-	$\overline{X}$	SD	Remark
39	Explain surface wiring for industrial installation	3.17	0.98	Needed
40	Explain simple conduit wiring for industrial installation	3.21	0.99	Needed
41	Explain safety measures in carrying out surface wiring for industrial installation	3.29	0.94	Needed
42	Explain safety measures in carrying out conduit wiring for industrial installation	3.32	0.67	Needed
43	Carry out a surface wiring system of an industry	2.90	0.83	Needed
44	Identify duct wiring of an industry	3.00	0.77	Needed
45	Carryout a trunking wiring system of an industry	3.04	0.96	Needed
46	Carry out conduit wiring system of an industry	3.21	0.63	Needed
47	State the advantages and disadvantages of ducts wiring systems in industrial electrical installation	3.11	0.69	Needed
48	State the advantages and disadvantages of trunking wiring systems in industrial installation	2.96	0.88	Needed
49	Use appropriate tools required in duct wiring	3.18	0.86	Needed
50	Use appropriate tools required in trunking wiring	2.96	0.88	Needed
51	Differentiate between motor and generator in electrical machine	3.36	0.78	Needed
52	Understand the use of starter for electric motors	3.36	0.78	Needed
53	Explain open circuit with examples in electrical installation	3.36	0.78	Needed
54	Explain short circuit with examples in electrical installation	3.36	0.78	Needed

Grand mean (μ) = 3.17

Table 2 presents the mean scores and level of technical competency needs of teachers teaching industrial electrical installation in skills acquisition centres in Yobe state, Nigeria. The result of the data analyzed shows the respondents indicated that they needed retraining in all the items industrial electrical installation modules. This is because the mean rating of the items ranged between 2.90 and 3.36 which were higher than the count-off point of 2-50 and a grand mean of 3.17.

Research question 3: What are the rewinding of electrical machine module competency needs of teachers of electrical installation and Maintenance work trade?

Table 3: Mean and Standard Deviation of Responses of Teachers on Rewinding Electrical Machines module Competencies Needs

S/N	Competency in rewinding of electrical machines.	$\overline{X}$	SD	Remark
55	Apply safety precautions in rewinding of electrical machines	3.79	0.57	Needed
56	Explain winding of electrical machine	3.43	0.92	Needed
57	Prepare simple lap winding drawing	3.14	0.71	Needed
58	Interpret simple lap winding drawing	3.00	0.86	Needed
59	Describe winding insulation material	3.32	0.77	Needed
60	Identify front and back shields	3.17	0.82	Needed
61	State how to dismantle electric machines systematically	3.11	0.88	Needed
62	Identify type of conductor used in rewinding	3.57	0.57	Needed
63	Prepare winding formers	3.10	0.90	Needed
64	Prepare winding coil	3.21	0.74	Needed
65	proper insulate winding coil	3.32	0.90	Needed
66	Test continuity and earthling on winding coil	3.18	0.90	Needed
67	Carry out vanishing and drying of winding coil in oven	3.18	0.82	Needed
68	Apply grease to the appropriate parts of the machine	3.21	0.88	Needed
69	Test voltage and current with the right measuring meters	3.40	0.63	Needed
70	Assemble the electric machine systematically	3.40	0.88	Needed

Grand mean (μ) = 3.28

Table 3 presents the mean responses of the electrical installation and maintenance work trade teachers teaching rewinding of electrical machines on their perceived level of technical competency needs in the 16 technical competency items identified in rewinding of electrical machines. The teachers indicated that they needed improvement technical competency in all the items. This is because the mean rating ranged between 300-3.57 and a grand mean of 3.28 which were greater than the decision point of 2.50

Hypothesis 1: There is no significant difference between the mean rating scores of graduate teachers and non-graduate teachers of Electrical installation and maintenance work on their technical competency needs for effective teaching of Domestic electrical installation.

Table 4: t-test Analysis between Graduate and Non-graduate Teachers on Competency Needs in Domestic Electrical Installation

Group	$\bar{X}$	SD	Df	t-cal	t-critical	Remarks
Non-graduate	3.22	0.26	26	1.204	2.056	
						Accept
Graduate	3.19	0.34				

The result in Table 4 was the t-test of technical competency needs of graduate and non-graduate teachers in domestic electrical installation, having t-cal of 1.204 and the t-critical of 2.056 at 0.05 level of significance. Since the t-cal of 1.204 is less than the t-critical of 2.056, the null hypothesis is accepted. This implies that there is no significant difference between the graduate teachers and non-graduate teachers in their needs for retraining in domestic electrical installation module.

Hypothesis 2 : There will be no significant difference in the mean rating scores of graduate teachers and non-graduate teachers of Electrical installation and maintenance work on their technical competency needs for effective teaching of Industrial electrical installation.

Table 5: t-test Analysis between Graduate and Non-graduate Teachers on Competency Needs in Industrial Electrical Installation

Group	$\bar{X}$	SD	Df	t-cal	t-critical	Remarks
Non-graduate	3.19	0.28	26	0.147	2.056	
						Accept
Graduate	3.18	0.20				

The result in Table 5 was the t-test of technical competency needs of graduate and non-graduate teachers in industrial electrical installation, having t-cal of 0.147 and the t-critical of 2.056 at 0.05 level of significance. Since the t-cal of 0.147 is less than the t-critical of 2.056, the null hypothesis (Ho_2) is accepted, that there is no significant difference between the mean response of graduate teachers and non-graduate teachers of Electrical installation and maintenance work in the needs of technical competency in Industrial Electrical Installation.

Hypothesis 3 : There will be no significant difference in the mean rating scores of graduate teachers and non-graduate teachers of Electrical installation and maintenance work on their technical competency needs for effective teaching of Rewinding of electrical machine.

Table 6: t-test Analysis between Graduate and Non-graduate Teachers on Competency Needs in Rewinding of Electrical Machines.

Group	$\bar{X}$	SD	Df	t-cal	t-critical	Remarks
Non-graduate	3.29	0.27	26	0.534	2.056	
						Accept
Graduate	3.26	0.17				

The result in Table 6 was the t-test of technical competency needs of graduate and non-graduate teachers in rewinding of electrical machines, having t-cal of 0.534 and the t-critical of 2.056 at 0.05 level of significance. Since the t-cal of 0.534 is less than the t-critical of 2.056, the null hypothesis is accepted, that there is no significant difference between the mean response of graduate teachers and non-graduate teachers in their needs of technical competency in rewinding of electrical machines.

5. Findings of the Study

The following are the findings of the study based on the research questions answered and the hypotheses tested.

1. The electrical installation and maintenance work teachers of Skills acquisition centres in Yobe State indicated that they needed technical competency in all the 38 items of domestic electrical installation with the mean score ranging from 2.75 to 3.46 which is above the cut-off point of 2.50 as shown in Table 1.
2. The electrical installation and maintenance work teachers of Skills acquisition centres in Yobe State indicated that they needed technical competency in all the 2t6items of industrial electrical installation with the mean rating range from 2.96 to 3.36 which is above the cut-off point of 2.50 as shown in Table 2.
3. Graduate and Non-graduate teachers of electrical installation and maintenance work in Skills acquisition centres of Yobe State indicated that they needed technical competency in all the 16 items of rewinding of electrical machines with the mean score ranging from 3.00 to 3.79 which is above the cut-off point of 2.50 as shown in Table 3.

4. Significant difference did not exist in the mean response of graduate and non-graduate teachers of electrical installation and maintenance work on the needs of technical competency in domestic electrical installation at a 0.05 level of significance. The graduate and non-graduate teachers all agreed that they needed technical competency in domestic electrical installation.
5. Significant difference did not exist in the mean response of graduate and non-graduate teachers of electrical installation and maintenance work on the needs of technical competency in industrial electrical installation at a 0.05 level of significance. The graduate and non-graduate teachers all agreed that they needed technical competency in industrial electrical installation.
6. Significant difference did not exist in the mean response of graduate and non-graduate teachers of electrical installation and maintenance work on the needs of technical competency in rewinding of electrical machines at a 0.05 level of significance. The graduate and non-graduate teachers all agreed that they needed technical competency in rewinding of electrical machines.

6. Discussion of Findings

Findings related to research question 1 in Table 1 showed that technical competencies are needed as perceived by the respondents in identifying source of hazard, preventing hazard, use of safety equipment, appropriate procedure for tackling accidents, identification of electrical accessories on working drawing, installing of the electrical accessories as indicated on the working drawing, applying statutory regulation in domestic electrical installation. All the 38 items were found to be needed. Therefore, as far as the finding is concerned technical competency in teaching domestic electrical installation is needed because almost all the respondents perceived that, technical competency in teaching domestic electrical installation is needed.

The responses of the respondents on technical competency buttressed what [15] noted that there is lack of adequate skills in teaching Domestic electrical installation by some vocational education teachers. [16] who conducted a study on the retraining needs of electrical installation and maintenance work teachers indicated that there is low level of possession of technical skills by teachers in domestic electrical installation module. However, effective teaching of any vocational education is rooted in adequate skills and knowledge of the subject matter.

Findings related to research question 2 as in Table 2 revealed that, the ability to explain safety measures in carry out conduit wiring in an industrial installation, carry out surface wiring in an industry, identify duct wiring in an industry, carry out trunking wiring system of an industry, are needed competency. The respondents also perceived that technical competency in the use of appropriate tools in duct wiring; appropriate tools in trunking wiring, understanding the difference between motor and generator, use of starter in electric motor are needed and so on. The findings also revealed that ability to explain open circuit, short circuit in an electrical installation are needed competency as perceived by the respondents. These perceptions of the respondents cannot be diverted from what [16] and [17] when they individually noted that some teachers need skills in industrial installation for effective teaching.

Findings related to research question 3 in Table 3 showed that ability to apply precaution in rewinding, prepare simple wave winding drawing, prepare simple lap winding drawing, identify conductor used in winding, describe winding insulation material, dismantle the machine systematically are needed as perceived by the respondents. Preparing winding coil, fixing the winding coil in the slots, testing of continuity and earthing, applying vanish, assemble the machine systematically are also needed as perceived by the respondents. This shows that in all the 16 items representing 100% are needed as perceived by the respondents.

The findings seem to agree with the position of [18] that many electrical teachers need more improvement in winding of electrical machine. This goes in consonance with Ogbu [19] conducted a research on technical competency needs of Brick/Block laying and Concreting teachers in technical colleges in Enugu and Anambra states of Nigeria, whose discovered that many technical teachers need update in theory and practical in most of the identified technical competency for effective teaching of their trade. This also proved [16] that many electrical teachers need retraining in rewinding of electrical installation.

Findings related to hypothesis 1 in Table 4 indicated that the value of the calculated t of 1.204 is less than the table value of 2.056 at 0.05 level of significance; therefore, the null hypothesis (Ho_1) was accepted. This implied that no significant difference between the mean responses of graduate teachers and non-graduate teachers of Electrical installation and maintenance work in the technical competency needs on teaching domestic electrical installation. This finding supports the position of [15] and [16] that there is lack of technical competency by some vocational education teachers in teaching of domestic electrical installation.

Findings related to hypothesis 2 in Table 5 showed that the calculated t value of 0.147 is less than the table value of 2.056 at 0.05 level of significance, therefore the null hypothesis was accepted, meaning that there is no significant difference between the mean responses of graduate teachers and non-graduate teachers of Electrical installation and maintenance work in the needs of technical competency for effective teaching of industrial electrical installation. The findings are in support of [16] and Halton [17] that some teachers need

skills (technical competency) in industrial installation for effective teaching.

Findings related to hypothesis 3 in Table 6 revealed that the calculated t of 0.534 is less than the table value of 2.056 at 0.05 level of significance as such the null hypothesis is upheld, meaning that no significant difference between the mean responses of graduate teachers and non-graduate teachers of Electrical installation and maintenance work in the needs of technical competency required for effective teaching of Rewinding of electrical machine. The findings agreed with [19] that many electrical teachers need improvements in rewinding of electrical machines. Moreover, the findings relating to all the three hypotheses agreed with the findings of [20] who discovered that no significant difference existed between trained and untrained technical teachers in competency needs in technical skills.

7. Conclusion

The findings of this study served as the basis for making the following conclusions:

The electrical installation and maintenance work trade teachers teaching in the skills acquisition centres in Yobe state needed technical competency improvement in all the items listed in domestic electrical installation. The result revealed that electrical installation and maintenance work trade teachers needed technical competency in all of the 16 items of industrial electrical installation and the perception of graduates electrical installation and maintenance work trade teachers in skills acquisition centres do not significantly differ from the non-graduates in terms of needs of technical competency in teaching all the aspects of electrical installation and maintenance work trade.

9. Recommendations

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

1. The electrical installation and maintenance work trade teachers should be encouraged by the employer and other relevant stakeholders to acquire more technical competencies in teaching domestic, industrial installation and rewinding of electrical machines.
2. Government should organize workshops/seminars to teachers for electrical installation and maintenance work on the use of modern tools and equipment.
3. Both graduate and non-graduate teachers should device a way of acquiring more knowledge and skills in their subject areas.
4. Both graduate and non-graduate teachers should encourage themselves in collaborative discussion on skills and knowledge of their subject area to enhance their technical competency.
5. The electrical installation and maintenance work teacher should imbibe practical continuously to their students which will lead to acquisition of employable in the trade by the students.

REFERENCES

1. National Directorate of Employment (2013). Annual Report, Nigeria.
2. Federal Republic of Nigeria (2009). *National policy on Education*. Abuja NERDC Press.
3. .Adamu, A. M. (2008). Competency Needs of Building Trade Teachers in Government Technical College in North-Eastern Nigeria. Unpublished *Master's thesis*, Technology Education Department, Modibbo Adama University of Technology Yola.
4. Spring, (2007). Competency in Industrial Electrical Technology: Wiring Matters. www.theiet.org Retrieved 12/08/ 2014.
5. James, A. (2013). The Essential guide to the mandatory knowledge, skills and competency required for personnel working in hazardous areas. www.intertek.com or training.uk@intertek.com Retrieved 4/6/2013
6. Mark, A. J. (2011). Proficiency in Teaching of Technical and Vocational Skills. A Lead paper presented during the 2nd National Conference organized by School of Technical Education, Federal College of Education (Technical) Potiskum, Yobe State, Nigeria.
7. Kenneth, R. (2012). Pedagogical Content Knowledge and Industrial Design Education. *Journal of Technology Studies*. *Metropolitan State College of Denver, Colorado.*
8. Golebniak, T. K. (2012). Teacher competency: meanings, dimensions, categories for Teacher Pedagogical Training at the Council for Teacher Education of the Committee on Pedagogical Sciences, the Polish Academy of Sciences.
9. National Business and Technical Examination Board (2006). National Board for Technical Education Modular Curriculum. Electrical/ Electronic Trade. Benin City, Nigeria.
10. National Board for technical Education (2007). Standard Criteria for Institutional and Programme Accreditation in Technical Colleges and Similar Technical Institutions in Nigeria. Plot B. Bida road, Kaduna, Nigeria.
11. Sowande, K. G. (2002). Technical Competency Improvement Needs of Metal work Teachers in Nigerian Colleges of Education. Unpublished *Doctoral thesis*, University of Nigeria, Nsukka.

12. Yunus, I. M. (2008). Competency needs analysis of technical teachers. A paper presented at the in-house workshop on the roles of Technical Teachers in Nigerian Education. Federal College of Education (Technical) Bichi, Kano State. Nigeria.
13. Obiano, E. C. (2006) Mission of Vocational Technical Education in Technical Competency of teachers. *Journal of Issues in Technical Teacher Education* Vol. 4, 23 – May. P25 – 32.
14. Sani, M. H. (2011). Factors Affecting Effective Teaching of Electrical Installation and Maintenance Work Trade in Skills acquisition centres in Yobe State. Unpublished *Bachelor in Technology education thesis*: Federal University of Technology Minna.
15.Mshelbwala, P. Z. (2008). Delivery of Domestic and Industrial installation Course in Nigerian Colleges: Problems and prospects. *The Journal of Nigerian Association of Technology Teachers*, Vol. 6. November. P47.
16. Mbaga, V. E. (2011). Retraining Needs of Electrical Installation and Maintenance Works Trade Teachers in Technical Colleges in North-Eastern Nigeria. Unpublished *Doctoral thesis*, Modibbo Adama University of Technology Yola.
17. Halton, G. (2014). Industrial Electrician. http://www10.hrsdc.gc.ca/Es/English/showprofile.aspx?v=207
18. Terrel, C. (2004). *Winding of Electrical Machines*. McGraw Hill, New York.
19. Ogbu, J. I. (2004). Technical Competency Needs of Brick/ Block Laying and Concreting Teachers in Government Technical Colleges in Anambra State, Nigeria. Unpublished *Master's thesis*, University of Nigeria Nsukka.
20. Diraso, D. K. (2000). Competency needs of technical teachers of technical colleges of Adamawa State. Nigerian *Journal of Education and Technology*, (1), 25-30.