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Skill Improvement Needs of Electrical Installation Trade Teachers in Technical Colleges for Productive Employment

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Abstract
The research sought to identify the skill improvement needs of electrical installation trade teachers in technical colleges for productive employment. A structured questionnaire was the instrument adopted to elicit data from the respondents. The population of the study consisted of sixty three (63) teachers currently teaching in technical colleges in Ebonyi State school system. No sampling was done because of the relative small size of the teachers' population. The data collected was analyzed using mean and standard deviation. The findings of the study revealed that teachers need to update their pedagogical skills in planning curriculum, instructional objectives and evaluation in electrical installation trade teaching. The teachers also need to improve their teaching prowess by partaking in in-service trainings to update their competencies aimed at up skilling technical college students to enable them adjust to the world of paid employment or self reliance on graduation.
Keywords: Skill, improvement, needs, electrical, installation, teachers

1. Introduction

The glaring importance of equipping the Nigerian Youths with productive employable skills made the Federal Government to emphasize the effective implementation of Technology and Vocational Education system. The relevance of Technology and vocational education in the society includes the recipients possessing the abilities through training to create jobs and to earn living through application of the acquired practical skills especially in Electrical installation technology. Okeke (2010) pointed out that to possess skill is to demonstrate the habit of acting, thinking and behaving in a specific activity in such a way that the process becomes natural to the individual through purposeful repetition or practice in that occupation. Skills acquisition development and sustained improvement give credence to advancement of intrinsic individual potentials. The youths need sustained ability and encouragement to rise to this level by overcoming the challenges inherent in skills acquisition processes. To this effect, Osuala (2004) pointed out that most technical skills training actually present challenges to the learner by integrating practical work, theoretical knowledge, common sense, observation ability and encouragement in an occupation.

The genesis of technical skills acquisition lies in technical colleges. The Federal Government (2004) in the National policy on education stressed that technology education through which practical technical skill is acquired start from technical colleges. In Ebonyi State the same system applies as students that wish to acquire technical skills normally enroll in the available technical colleges. Okoro (2008) asserted that technical colleges are the principal vocational institutions in Nigeria which is designed to prepare the individual to acquire practical skills, knowledge, and aptitude required of technicians at sub-professional level. This implies correctly that technical colleges are designed to give full craft man training intended to prepare youths for entry into various occupations of their interests. Among the occupations that youths are given training in the technical college include Electrical installation (repair, maintenance and installation).

It is an enormous function that technical colleges are expected to perform in offering the youth saleable skills. However, the present conditions of the technical colleges with respect to the available technical teachers that operate the system are deplorable. Earlier, the National Policy on Education, Federal Republic of Nigeria (2004) noted sadly that from all indications, there is a lack of quality in technology teacher training, including electrical installation teachers serving in the technical colleges. Technical colleges in Ebonyi State are no exempts as their graduates lack the requisite skills needed to install or diagnose faults in electrical installation systems, domestic, industrial or overhead installations. The insufficient Technical college skills training in the various occupations in electrical installation trade culminated to deprivation of the graduates from securing paid employment or self-reliant job in the occupation. Okoro (2008) remarked that the products of technical institutions do not have the knowledge and skills that will enable them to take up the available jobs.

No educational enterprise can rise above the status of the teachers that operate it. To this end, Ekwue (2009) Opined that technical teachers present skills call for every Nigerian to strive towards self-reliance and self-dependent through productive skill development. The training of the students to be self-reliant needs well bred teachers that would be capable of imparting the right skills effectively. The teachers must therefore possess relevant skills for teaching electrical installation to enable technical college students receive proper saleable skills training for proper adaptation to the world of work.

It is therefore clear that every society needs proficient and well trained work force. A well train electrical installation worker will be capable of designing, installing and repairing or maintaining electrical work

systems in industries and residential buildings. Despite the dire need of producing skilled and competent workers for technical advancement, the teaching of Electrical installation in technical colleges appears abysmal. Basu (2010) pointed out that most problems associated with teaching of electrical installation at technical colleges hinges on manual skills possessed and the teachers' ability to teach effectively. These problems undoubtedly had given rise to in efficiency and inadaptability of technical college education graduates in the world of modern Electrical installation Technology. Due to the lack of electrical installation teachers in technical colleges the products of the colleges are being restricted in skillfulness efficiency, proficiency and productivity. This scenario had further contributed to the rising rate of unemployment in the society. If teachers keep their competency up to date through progressive learning in the world of work they could teach effectively. In this way, students would acquire saleable skills that would enable them adapt to the modern world of electrical installation. It is therefore imperative to ascertain the skills needed and possessed by electrical installation teachers for improvement and effective delivery of their professional duties in the Technical colleges.

2. Purpose of the Study

The major purpose of the study was to ascertain the technical skill improvement needs of Electrical installation teachers in technical colleges for productive employment. Specifically the study was set out to determine the:

1. Pedagogical skills needed by electrical installation teachers to impart the modern Electrical Installation technology skills in technical colleges for productive employment.
2. Strategies for acquiring the requisite skills for improvement by electrical installation teachers.

3. Research Questions

The following research questions were formulated to guide the study.

1. What are the pedagogical skills needed by Electrical installation teachers to impart modern electrical installation skills in technical colleges?
2. What are the strategies for acquiring the required skills for improvement by Electrical installation teachers?

4. Methodology

A survey research design was employed in carrying out this study. Okeke (2010) pointed out that a survey research design is one which involves the assessment of public opinion using collection of detailed descriptions of existing phenomena with the intent of using the data to justify current conditions and practices or to make better plans for improving phenomenon. This design was deemed appropriate in carrying out this study because it used a questionnaire to seek information directly from the teachers who are the major stakeholders in the teaching of skills and are in the best position to provide reliable and relevant information to authenticate the research.

The study was conducted in the three Education zones of Ebonyi State: Abakaliki, Onueke and Afikpo education zones. There are four technical colleges in the State, one in each zone. Three of the technical colleges that offer electrical installation trade were used for the study. The total number of teachers was 63 as recorded in secondary Education Board (SED), Abakaliki. The entire population was used, hence there was no sampling.

The instrument used for the data collection was a questionnaire developed after a review of literature on Electrical installation trade. The instrument was face validated by three lecturers who are experts in Technology and vocational Education in Ebonyi State University. The reliability of the instrument was established using Cronbach Alpha Reliability technique which yielded the reliability coefficient of 0. 93. This was considered a high reliability.

After the data collection, the mean and standard deviation were employed to analyze the data in line with the research questions using 0.05 as an interval scale; the upper limit of the mean was 2.50 + 0.05 = 2.55 or above was regarded as needed or agreed, while any item with mean score below 2.55 was as unfavorably regarded. Any item with a standard deviation of between 0.00 and 1.96 indicated that the respondents were not far from the mean and the opinion of one another.

5. Results

The results for the study were obtained from the research questions answered by the respondents. They are presented in tables preceded by each guiding research question.

5.1 Research Question 1

What are the pedagogical skills needed by electrical installation teachers to impart electrical installation skills in technical colleges?

Table 1: Mean and standard deviation of responses of electrical installation teachers on the pedagogical skills needed

S/N	Pedagogical skills on instructional planning	$\bar{x}$	SD	Decision
1.	Examine the electrical installation curriculum program module	3.71	0.48	Needed
2.	Properly establish instructional objectives	3.25	1.05	Needed
3.	Determine from the module the instructional content	3.55	0.55	Needed
4.	Specify instructional concepts in learnable units for students in the classroom	3.34	0.68	Needed
5.	Specify instructional concepts in the learnable units for students in the workshop during practice	3.45	0.67	Needed
6.	Properly Arrange instructional contents in order of presentation.	3.40	0.51	Needed
7.	Properly arrange objectives in ascending order of complexity.	3.42	0.52	Needed
8.	Identify adequate learning experience for instruction	4.28	0.45	Needed
9.	Identify adequate learning experiences for instruction	3.26	0.60	Needed
10.	Properly select for adoption relevant teaching methods.	3.43	0.50	Needed
11.	Emphasize appropriate technique of instructional delivery pedagogical skills on instructional implementation.	30.26	0.60	Needed
12.	Select and use relevant instructional method to link the previous experience with the new lesson.	3.42	0.52	Needed
13.	Tactfully present selected instructional objectives	3.27	0.72	Needed
14.	Arrange selected content in sequential instructional delivery order	3.14	0.64	Needed
15.	Use of appropriate questioning technique to determine learning outcome.	3.30	0.58	Needed
16.	Timely presentation of learning materials to boost instruction.	3.07	0.70	Needed
17.	Introduce learners' instructional activities at the appropriate time.	3.15	0.62	Needed
18.	Promptly identify learners learning difficulties in the workshop.	3.13	0.49	Needed
19.	Identify learners learning errors during instruction.	3.20	0.57	Needed
20.	Adopt appropriate instructional evaluation technique.	3.15	0.62	Needed
21.	Promptly correct learners error.	3.20	0.57	Needed
22.	Adjust instructional strategy in response to learners feed back pedagogical skills on Instructional Evaluation	3.91	0.53	Needed
23.	Specify the instructional objectives to be evaluated	3.36	3.46	Needed
24.	Select evaluation techniques to be employed	3.22	0.98	Needed
25.	Develop evaluation strategies to be employed	3.43	3.55	Needed
26.	Properly administer the tests	3.87	0.62	Needed
27.	Supervise the learners' independent performance in tests	3.22	0.52	Needed
28.	Objectively assess students' performance	3.12	0.64	Needed
29.	Timely grade the learners	3.30	0.61	Needed
30	Provide performance feedback to the students	3.77	0.57	Needed

Table 1 indicates that the teachers need all the thirty (30) items on pedagogical skills for imparting skills on Electrical installation trade students in technical colleges. The mean scores for each item were above 2.55 cut off point.

5.2 Research Question 2

What are the strategies for acquiring the required skills for improvement by Electrical installation teachers?

Table 2: Mean and standard deviation of responses of the teachers on strategies for acquiring the required skills for improvement on electrical installation

S/N	Strategies for acquiring the required skills	$\bar{x}$	SD	Decision
1.	Work based learning in form of on the job	3.73	0.46	Agreed
2.	Through industrial visits such as field Trip	3.40	0.48	Agreed
3.	Consulting external job experts	3.52	0.44	Agreed
4.	Supervising students carrying out practical work.	3.43	0.73	Agreed
5.	Engage students on workshop practicals	3.86	0.87	Agreed
6.	Supervise SIWES students	3.24	0.83	Agreed
7.	Interacting with professional colleagues on Electrical installation modern techniques	3.25	0.46	Agreed
8.	Setting up exhibitions by learners	3.33	0.74	Agreed
9.	Undertaking information search	3.21	0.83	Agreed
10.	Consulting current journals	3.47	1.19	Agreed
11.	Reference to technical manuals	2.20	0.58	Rejected
12.	Engaging in team work	3.17	1.06	Agreed
13.	Seminar to acquire new skills	3.24	0.88	Agreed
14.	Carrying out demonstration often.	3.13	1.02	Agreed

The data presented in Table 2 shows that respondents agreed on the fourteen items but disagreed on only one item 11.

6. Discussion

The findings emerging from the opinions of the respondents revealed that all the thirty (30) pedagogical skills needed to effectively teach electrical installation trade in technical colleges were overwhelmingly accepted. The teachers therefore agreed that pedagogical skills that they need to effectively plan instruction should include careful examination of electrical installation curriculum as being now implemented, proper establishment of instructional objectives and determination of proper instructional content. The curriculum of electrical installation should be well examined to ensure that it is versatile, holistic and dynamic. Ekwue (2009) noted that the problems of different vocational and technical schools stem from the fact that their curriculum is very narrow and that some of them do not provide enough varied experiences for students while others in most cases are never upgraded to meet with the demands of the labour market. If the curriculum is faulty, the objectives that are derived from it would subsequently be problematic. The respondents also agreed that specifying instructional concepts in learnable units for students in the class would enhance skill acquisition. Arrangement of instructional contents and objectives in right order of presentation, identification of appropriate learning experiences and adopting of proper teaching methods were accepted by the teachers as good pedagogical planning skills.

The respondents accepted all the eleven items on the pedagogical skills on instructional implementation (items 12-22). They posited that proper selection of relevant instructional method to link the previous experiences with the new lesson is important. Tactful presentation of selected instructional objectives and sequential arrangement of the content of instruction were also identified as ideal for effective pedagogical skills instructional implementation. Use of appropriate questioning technique was accepted as a good measure for effective pedagogical skills instructional implementation. This finding is supported by Okoro (2008) who pointed out that questioning may be used to introduce a new skill topic, seek solution or draw students' attention to some important points in the lesion. Other items on the pedagogical skills for effective instructional implementation were accepted by teachers.

On pedagogical skills for instructional evaluation, the teachers agreed that all the specified items (23-30 are important for effective instructional evaluation. They therefore posited that specifying objectives to be evaluated is very important for effective skill teaching. Items 24, 25 and 26 on evaluation technique selection, development and administration were respectively favorably rated by teachers. The respondents also posited that supervision of students during testing period, timely grading of students and providing feedback to them on their performance all form sound pedagogical skills in proper evaluation.

On the strategies for acquiring the needed skills for improvement on electrical installation, respondents accepted all the items except item eleven (11) on references to technical manuals. This finding contravened Darrah (2012) that rather upheld that the making references to technical machines manuals are invaluable as this helps users to operate such machines successfully. Respondents' rejection of this item may be based on the ignorance of the value of such referencing.

7. Conclusion

Based on the findings of the study, the following conclusions were drawn: Electrical installation trade teachers training background lack quality in terms technical skills required of them that were not sufficiently possessed

by them. This gives credence to shallow skills with which they train students of electrical installation trade in Technical colleges in Ebonyi State of Nigeria. Furthermore, constant practice of pedagogical skills needed to impart required skills in electrical installation trade will elevate the teachers to be fully qualified and teach effectively in the technical colleges. When teachers are well groomed in the various pedagogical skills it would be easier to effectively implement the Electrical installation trade curriculum in the technical colleges.

8. Recommendations

On the bases of the major findings of this study, the following recommendations were made:

1. Teachers of electrical installation trade should be given in-service training to enable them continuously updating their pedagogical skills in planning for effective teaching of skills, instructional implementation and instructional evaluation.
2. Technical college administrators should provide the avenues to enable their teachers of electrical installation trade to participate jn worthwhile ventures that would enable them effectively teach the needed skills. Such ventures include participation in field trips, SIWES organization and supervision, consulting external job expert, engage in workshop practicals and encouraging students to mount exhibitions.
3. The teachers should organize themselves for effective team work interactions to update their technical skill competencies.
4. The Ebonyi State Government should encourage Electrical installation trade teachers by giving them incentives and financial support to participate in in-service training that would enable them update their skills and pedagogical competencies in their work.

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