PDF - SAFETY SKILLS REQUIRED BY ELECTRICAL INSTALLATION AND MAINTENANCE WORKS STUDENTS FOR EFFECTIVE PERFORMANCE IN ANAMBRA STATE - researchcub.info

ABSTRACT

In manyelectrical/electronic workshops in technical college in Rivers State today, therate of accidents which causes damage to facilities and workshop users isalarming. As a means of reducing accidents occurrences, safety practices andprocedures are observed. Hence, this study examines the implementation ofsafety skills required by technical college electrical installation andmaintenance works students in handling instructional resources for optimalperformance in their workshop in Rivers State technical colleges.

A descriptive researchsurvey design guided the study. The population of the study consists of 27respondents (18 teachers and 9 instructors) of electrical/electronic trades.There was no sample and sampling technique due to small population size. Fourresearch questions were answered. The instrument used for data collection was astructured questionnaire which was validated by two experts. The instrument forthe study was partitioned into four sections. Sections A to D were patternedafter Likert-5-point rating scale of agreement. A reliability coefficient of0.85 was established for the instrument using Cronbach Alpha coefficientreliability method. Mean and Standard Deviation were used to answer theresearch questions.

It was found thatpower tools not properly grounded and insulated, presence of fire and explosionhazards, working with high voltage without following necessary standards andthe use of metal ladder while working on electrical installation are the causesof accident occurrences in electrical/electronic workshops while amputation ofaffected parts, suffering from psychological trauma, students withdrawal fromprogrammes were some of the effects of accidents.

Based on thefindings, it was recommended among others that workshop users should be givenproper orientation by school management and government on activities thatcauses accidents such as unsafe conditions and unsafe acts, workshop usersshould be inform by relevant authorities such as Nigerian Institute of SafetyProfessionals (NISP) on the effect of accident occurrences in technicalcolleges, Safety experts should be employed in technical college to educate theusers of the workshop especially on areas concerning accident preventivemeasures and so on.

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CHAPTERONE

1.0INTRODUCTION

1.1BACKGROUND OF THE STUDY

Occupational safetyis of paramount concern to both workers and students. Students and even parentsare much more interested in the level of safety provided in a particularoccupation. Graduates who possess required safety skills would always fairbetter in an occupation, especially technical occupations. The knowledge ofsafety practice skills by electrical installation students in technicalcolleges is an essential prerequisite for effective use of tools and machinesin the workshop. Skilled electrical worker is not just someone who can performany electrical job correctly but a worker who can complete every job safely(Oranu, Nwoke and Ogwo 2002). Safety has become a major determinant foreffective and successful performance in a job.

In the view of Olaitan,Nwachukwu, Igbo, Onyeamaechi and Ekon (1999), safety is the art of takingprecaution for the avoidance or reduction of accidents in order to protectpeople and property. Oranu, Nkowe and Ogwo (2002) further view safety as theability to perform every simple task involved in a job without causing damageto tools, equipment or materials used in performing the task. Safety practiceis the ability to perform a task with necessary precautionary measuresexhibited for the purpose of preventing accidents. Practice means doingsomething repeatedly in order to improve performance. For students to perform atask with little or no record of accidents in electrical workshop, certainrelated skills are required by them.

However, Okorie(2000) defined skill as a manual dexterity through repetitive performance of anoperation. Skill is a well-established habit of doing something and it involvesthe acquisition of performance capabilities (Osinem 2008). This implies thatskill involves well-established habit of doing things. In this study, skill isthe ability of electrical installation students in Technical colleges toestablish good habit performance in the workshop by acting, thinking, andbehaving well in order to prevent minor and major accidents that is involving inany operation or job that is related to electrical installation and maintenancework.

Electricalinstallation is one of the trades in technical colleges. It is made up of thefollowing components, domestic and industrial installation; cable joining; batterycharging and repairs and winding of electrical machines (NBTE, 2014). In theview of Nwachukwu, Bakare and Jika (2011), electrical installation trade is avocational course offered by students in technical colleges in order to produceelectrical craftsmen and technicians. Electrical installation student is aperson who is taking vocational course offered in technical colleges in orderto become electrical craftsman. Nwachukwu (2006), opined that electricalinstallation students learn the basic skills required to operate, maintain,install and repair electrical installation equipment and appliances intechnical colleges.

Technical Collegesaccording to Okoro (2009), are principal vocational institutions in Nigeriawhich are designed to prepare the individuals to acquire practical skills,knowledge and attitude at sub-professional level, they are also established totrain craftsmen in various occupations. Okorie (2001) also saw TechnicalCollege as institutions where craftsmen are trained up to obtain the craftcertificate of West African Examination Council and advanced

craft certificate.Students who have completed the first three years of secondary school educationare eligible for admission into Technical Colleges. Technical Colleges aretherefore, schools or training institutions where trades are being taught. Itis imperative for technical colleges to take into cognizance the safety skillsnecessary in handling electrical equipment by students to achieve the setobjectives of the program.

However in thisstudy, technical college is formal place of learning where theory and practicalskills are learned by students from the teacher and instructor who give theinstruction.

1.2STATEMENT OF THE PROBLEM

Due to loss of toolsand machines as well as incessant occurrence of accidents that lead tosustenance of injuries and electric shock, many students have been skeptical toparticipate in practical activities in electrical workshop and as such, shyaway from participation. Yakubu (2004), confirmed that students in TechnicalColleges often absent themselves from school during practical lessons. This,according to Yakubu, was attributed to the accidents the students experience inthe workshops.

Similarly, damages totools and machines as well as accidents occurring in electrical workshop inTechnical Colleges in Plateau and Kaduna States seem to have instilled fearinto the students which has made them to be absent during practical work. Theenrolment level into electrical installation trade in the technical colleges isalso on decline because parents and students are apprehensive of the frequentaccident rate occurring in the colleges. The safety practice skills required byelectrical installation students in Technical Colleges in Plateau and KadunaState which could reduce the occurrence of accident and damages to tools andmachines may be lacking.

Most of the tools,equipment and machines damaged due to lack of safety skills by electricalstudents and some of the machines are imported ones, the parts are costly andnot easy to purchase or replace. The magnitude of damaged tools results in thenon-performance of many tools, equipment and machines, and the increase in therate of accidents in the workshops of technical colleges is still alarming andas such, students tend to shy away from electrical installation practicalbecause of fear of accident.

Therefore the problemthat this study intends to tackle is the decline in enrolments and theavoidance of practical activities in electrical workshops by students due tofear of electrical accidents. This gave the researcher a great concern to findout the safety skills required by technical college electrical installationstudents in handling equipment.

1.3PURPOSE OF THE STUDY

The main purpose ofthis study is to determine the safety skills required by technical collegeelectrical installation and maintenance works students in handlinginstructional resources for optimal performance in their workshop. Specifically,the study seeks to determine:

The Safety skillsrequired by electrical installation students in handling hand tools intechnical colleges in Plateau and Kaduna States.

The Safety skillsrequired by electrical installation students for operating machine tools intechnical colleges in Plateau and Kaduna States.

The workshop Safetyskills required by electrical installation students in Plateau and KadunaStates.

The personalprotective equipment and materials required by students for work in electricalinstallation workshop in technical colleges in Plateau and Kaduna States.

1.4SIGNIFICANCE OF THE STUDY

The findings of thestudy will be of benefit to the electrical installation Teachers, Students,Government, Curriculum planners, Workshop Personnel/electrical workers,National Board for Technical Education (NBTE), the society/parents and theresearchers.

Electricalinstallations teachers in technical colleges shall from the findings of thisstudy, when published, see the need to improve the teaching of safety skillsand to identify the materials needed for safety practice in electricalinstallation workshop. The findings will also benefit the

teacher to passacross instruction with ease and make it meaningful to the students.
The students willbenefit from the findings of this study by receiving standard training onsafety skills and the use of safety equipment which will in turn improve theirsafety and academic performance. The awareness from the findings of the studywill help the students to identify the personal safety equipment and makinggood use of them. The findings would assist the students in their everydayhandling and operation of equipment and tools in and outside the workshops.
These findings willbenefit the Government through Ministry of Education and Ministry of Science andTechnology by using the information provided to come up with measures that willensure effective supply of safety equipment and recruitment of qualifiedteachers. The Curriculum planners shall from the findings of this study, whenpublished, discover the need to introduce safety skills practices in thecurriculum, so that the students' of this programme shall possess theconsciousness and skill in managing electrical equipment. The finding of thestudy would assist in the curriculum review and updates in areas that lacksafety skills.
The result of thestudy would help the workshop personnel/electrical workers to effectively guidethemselves and the students when working on machine or making use of toolsduring practical works. Understanding of the result of the study would alsohelp the workshop personnel and workers to take adequate care of tools andequipment in the workshop by keeping them clean and placing them in their properposition in the work area.
The findings of thisstudy could be used by National Board for Technical Education (NBTE) as aquality control body to incorporate suitable programme that can enhance safetypractice competencies in electrical electronics profession.
The findings of thestudy will be of benefit to the society/parents at large, when competentelectrical installation students practice safety in handling electricalequipment both at home and in the community. The findings shall benefit thesociety when skilled graduates of electrical installation practice and educatethe public on safety measures to be taken when handling electrical equipment.
The information thatwould emanate from this study will stimulate similar research efforts in otherstates of the federation on the practice of safety skills required in theirinstitutions. The results may have far reaching implications for nationaldevelopment in general as new concepts would be discovered on safety skills.The findings of the study would provide information to researchers that maywish to carry out similar research in other field in the future.

1.5RESEARCH QUESTIONS

The followingresearch questions are formulated to guide this study:
What are the Safetyskills required of electrical installation students in handling hand tools intechnical colleges' workshops in Plateau and Kaduna States?
What are the Safetyskills required of electrical installation students for operating machines toolin technical colleges' workshops in Plateau and Kaduna States?
What are the workshopSafety skills required of electrical installation students in technicalcolleges in Plateau and Kaduna States?
What are the personalprotective equipment and materials required by students for work in electricalinstallation workshop in technical colleges in Plateau and Kaduna States?

CHAPTERFIVE

5.0CONCLUSION AND RECOMMENDATION

5.1CONCLUSION

In order to eliminateor reduce and minimize the rate of accidents occurrences inelectrical/electronic workshops in technical colleges in Rivers State, theresearchers concluded that there is urgent need for students and facilitatorsof electrical/electronic in the college to be introduced to safety practice asregard electrical/electronic and general workshop safety. This exposition willhelp the students and workshop users to be able to identified activities thatare both unsafe conditions and unsafe acts that are capable of causingaccidents that may result to loss of lives and damage to properties andpossibly its

effects on their academic performance while in the college.Possible strategies to minimize accidents occurrences include labeling alldangerous points and faulty equipment with the use of communication hazardboard in and outside the workshop premises.

5.2 Recommendations

Based on the findingsof the study, the following recommendations were made;

Workshop users shouldbe given proper orientation by school management and government on activitiesthat causes accidents such as unsafe conditions and unsafe acts. These willreduce accidents occurrences in the workshops and its environment as its userswill be conscious of activities to be carried out.

Workshop users shouldbe informed by relevant authorities such as Nigerian Institute of SafetyProfessionals (NISP) on the effect of accident occurrences in technicalcolleges. This will enhance carefulness and alertness in the workshop and itsenvironment for quality instructional delivery in technical colleges.

Safety experts shouldbe employed in technical college to educate the users of the workshopespecially on areas concerning accident preventive measures. This will ensuredurability of facilities and improves quality in instructional delivery in thecollege.

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