



Assessment of Health, Safety and Environment Procedures in Technical Colleges' Workshops in Rivers State

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ABSTRACT

This study assessed the Health, Safety and Environment Procedures in Workshops in Technical Colleges in Rivers State. The study adopted a descriptive survey design. A sample of 50 teachers/instructors and 300 students in the five Technical Colleges were selected randomly, making a total sample size of 350 respondents. The instrument for data collection was a structured questionnaire validated by three experts and the reliability of the instrument was ascertained using the test retest method to obtain a reliability coefficient of 0.89. Data collected were analyzed using the statistical mean. The findings of the study revealed among other things that the level of awareness and observance of Health, Safety and Environment procedures in technical colleges in Rivers State is very low. It was recommended therefore that teachers in technical colleges should be sponsored to attend short term Health, Safety and Environment Procedures courses with the aim to equip them with the much needed knowledge and skills necessary to be safety conscious and educate their students on safety procedures while in the workshop.

Keywords: Health, Safety, Environment, Workshop, Technical College

INTRODUCTION

Technical colleges are institutions that provide secondary level education in technical and vocational education and training (TVET). According to Federal Republic of Nigeria (2013) in its national policy on education, TVET is used as a comprehensive term referring to those aspects of educational process involving, in addition to general education, the study of technologies and related sciences and the acquisition of practical skills, attitudes, understanding and knowledge relating to occupations in various sectors of economic and social life. Okwelle and Okeke (2016) stressed that one of the feature of TVET is its orientation towards the world of work and the emphasis on the curriculum on the acquisition of employable skills. Specifically, technical colleges are post primary schools in Nigeria, designed to prepare individuals to acquire practical skills, basic scientific knowledge and attitude required as craftsmen and technicians at sub-professional levels (Akpan, 2003). These colleges are regarded as the principal vocational institutions that give full vocational training intended to prepare students for entry into various occupations as artisans and craftsmen. Given the practical nature of technical colleges, where the emphasis is on the acquisition of work related skills, the need for workshops where practical skills are taught is pertinent.

Workshops according to Umar (2010) refers to infrastructural facility containing tools, equipment, utilities and spaces for conducting technological and technical instructional activities.

Similarly, Baba (in Amenger, 2013) refers to workshop as a room or building where tools and machines are used for making or repairing things. Some workshops contain machines, hazardous chemicals and other equipment which could be harmful to humans if not properly handled. Since these workshops are set up to teach students who may not have prior knowledge of the operations of these machines, the tendency for accidents and "near misses" to happen becomes inevitable. Supporting this, Nick (in

Amenger, 2013) asserted that frequent accidents in the workshops lead to loss of confidence by the students and staff thereby discouraging learning and production processes. This underscores the need for a well-articulated Health, Safety and Environment plan which takes into cognizance the need for students and teachers alike to observe safety standards and procedures in the use of these workshops. Such plans should also ensure some safety equipment is put in place in these workshops to reduce the impact of accidents when they happen. Health, Safety and Environment (HSE) refers to measures put in place to ensure employers and employees in work places stay physically healthy, free from danger or harm (injury or damage) and the environment in which they work sustains the quality of life of the people and activities located within its confines (Nigeria Institute of Safety Professionals, 2015).

Health as a component of HSE is a state of being free from illness or injury. World Health Organization (WHO) in Business Dictionary (2017) defines health as a "State of complete physical, mental, and social well-being, and not merely the absence of disease or infirmity." Health is a dynamic condition resulting from a body's constant adjustment and adaptation in response to stresses and changes in the environment for maintaining an inner equilibrium called homeostasis. On the other hand, safety is referred to a state of being free from danger or harm (injury or damage)(NISP, 2015). Similarly, Parsha and Bansal (2008) defined safety as the art and science of identifying, evaluation and controlling work place hazards. They further stated that safety is the state of being certain that adverse effect will not be caused by some agents under defined condition. Furthermore, environment refers to all that surrounds humans on earth. Nick in NISP (2015) defined the environment as everything around a living being especially the circumstances of life of people or society in their life conditions. It comprises the set of natural, social and cultural values existing in a place and at a particular time, that influence in the life of the human being and in the generations to come. In this context, it is not only the space in which life develops, but it also includes living beings, objects, water, soil, air and the relations between them as well as intangibles like culture. In the same vein, New Age International (2015) defines environment literally means surrounding and everything that affect an organism during its lifetime is collectively known as its environment. In another words environment can be said to be the sum total of water, air and land interrelationships among themselves and also with the human being, other living organisms and property.

Workshops in technical colleges generally are filled with potential hazards due to the nature of training being carried out. Electrical activities for example expose students and teachers alike to electric shock which can lead to injury, lose of property or death. Similarly, some fire related machines for welding, combustible materials and chemicals and machines could lead to fire outbreak. The onus therefore is on the teachers and students in technical colleges to ensure they observe safety procedures while in the workshop. This view was shared by Bulama, Quahha, Tika and Gayus (2010) when they observed that the prevention of accidents in a college workshop is the duty of every staff and student working in the workshop. For a technical education teacher as a safety manager ensuring the safety of others including human as well as the facilities is of particular importance. This is because he is like a captain of a ship, he direct, coordinates and organizes the affairs of the workshop. This paper, therefore, assessed the level of awareness and compliance on HSE procedures by both teachers and students in workshops in technical colleges in Rivers State.

Statement of the Problem

Activities in workshops in technical colleges involve the use of people (students and teachers/Instructors), machines, materials, chemicals and the environment. Most of these machines, chemicals and materials are dangerous and harmful to human health, safety and the environment if not properly handled. This exposes both students and teachers to the risk of being injured while working in the workshops or in worst case scenario, death. Successive governments over the years have not paid attention to proper funding of technical colleges in Rivers State and the nation at large (Okwelle & Okeke, 2016). This has led to inadequate provision of safety facilities in these colleges. Safety equipment such as fire extinguishers and personal protective equipment (PPE) are either not enough or unavailable. This problem is further compounded by the fact that most facilitators in workshops do not have the necessary safety training even though they have the technical know-how in the use of machines and materials. Consequently, they and the students are exposed to accidents that lead to injury, damage of property and in worst cases fatality.

An effort to determine the status of health, safety and environment procedures in workshops in technical colleges in Rivers State prompted this study.

Purpose of the Study

The purpose of the study was to assess the health, safety and environment procedures in workshops in technical colleges in Rivers State. The specific objectives of the study are to:

1. Find out if there are safety equipment in workshops in technical colleges in Rivers State
2. Ascertain the level of safety consciousness among students and facilitators in workshops in technical colleges in Rivers State.
3. Find out the extent to which Health, Safety and Environment procedures are observed in technical colleges in Rivers State.

Research Questions

1. What is the safety equipment available in workshops in technical colleges in Rivers State?
2. What is the level of HSE consciousness among students and facilitators in workshops in technical colleges in Rivers State?
3. What is the extent of observance of HSE procedures in technical colleges in Rivers State?

METHODS

This study adopted a descriptive survey design. The area of study is Rivers state of Nigeria. The population of the study was 100 teachers/Instructors and 1500 students in the four technical colleges in Rivers State. These include Government Technical College, Eleogu, Government Technical College, Ahoada, Government Technical College Tombia, and Government Technical College, Port Harcourt. A sample of 50 teachers and 300 students in the five technical colleges were selected randomly, making a total sample size of 350 respondents. The instrument for data collection was a self-made questionnaire titled “Assessment of Health, Safety and Environment Procedures in Workshops in Technical Colleges Questionnaire.”The instrument was structured on a 4-point rating. The instrument was validated by three experts and the reliability of the instrument was ascertained with the test retest method and using the Pearson Product Moment Correlation statistics to obtain a reliability coefficient of 0.89. The collected data were analyzed using the mean statistics. Mean responses up to and above 2.50 were accepted and mean responses of 2.49 and below were rejected.

RESULTS

The analysis of data in relation to each of the research questions are presented in Tables 1- 3

Research Question 1: *What is the safety equipment available in workshops in technical colleges in Rivers State?*

Table 1: Mean Response for Safety Equipment Available in Workshops in Technical Colleges

S/N	ITEMS	MEAN	DECISION
1	Fire extinguishers are available in workshops	1.80	Disagree
2	Personal Protective equipment are worn by teachers/Instructors and students when working in the workshop	2.41	Disagree
3	Electrical installations are fitted properly with cautions signs on them in workshops.	2.37	Disagree
Grand Mean		2.20	Disagree

The results in Table 1 revealed that most of the respondents disagreed that there are fire extinguishers in their workshop (1.80). Item 2 showed that majority of the respondents also disagreed that every teacher and student has his/her personal protective equipment when working in the workshop (2.41). Item 3 in the table revealed that majority of the respondents agreed that electrical installations in the respondents’ workshop are fitted properly with caution signs on them. With a grand mean of 2.20 therefore, the answer

to research question one is that there is not enough safety equipment in workshops in technical colleges in Rivers State.

Research Question 2: *What is the level of HSE consciousness among students and facilitators in workshops in technical colleges in Rivers State?*

Table 2: Mean Response on the Level of HSE Consciousness among Students and Facilitators in Workshops in Technical Colleges

S/N	ITEMS	MEAN	DECISION
4	Students and teachers/Instructors are aware of areas of possible hazards in workshops.	2.63	High Level
5	Students and teachers/Instructors are aware of HSE procedures in work place.	2.28	Low Level
6	Teachers/Instructors and students keep record of accidents and near misses in the workshop	2.45	Low Level
Grand Mean		2.45	Low Level

The results in Table 2 revealed that item 4 with a mean score of 2.63 showed that students and teachers/instructors in workshops are aware of areas of possible hazards in their workshops to a high level. Item 5 with a mean score of 2.28 revealed that the level of awareness on HSE procedures is low among students and staff using technical workshop. Item 6 with a mean score of 2.45 however showed that the level to which teachers/instructors and students keep record of accidents and near misses in workshops is low. With a grand mean of 2.45 therefore, the answer to research question two is that the level of HSE consciousness among students and facilitators in workshops in technical colleges in Rivers State is low.

Research Question 3: *What is the extent of observance of HSE procedures in technical colleges in Rivers State?*

Table 3: Mean Responses on Extent of Observance of HSE Procedures in Technical Colleges

S/N	ITEMS	MEAN	DECISION
7	Teachers/Instructors ensure the use of personal protective equipment in the workshops	2.73	High Extent
8	There is periodic sensitization on safety procedures to be adopted before using the workshop.	2.36	Low Extent
9	There is enforcement of penalty for students who use the workshop without their safety equipment.	2.70	High Extent
10	Teachers/Instructors ensure there are caution signs for harmful chemicals and equipment in workshops	2.18	Low Extent
Grand Mean		2.49	Low Extent

Item 7 in Table 3 showed that teachers/instructors ensure the use of personal protective equipment in the workshops in technical colleges to a high extent. (2.73). Item 8 also showed that with a mean score of 2.36 the extent to which sensitization on safety procedures to be adopted before using the workshop is low. Item 9 further revealed that the extent of enforcement of penalty for students who use the workshop without their safety equipment is high. Finally, item 10 showed that the extent to which teachers ensure there is caution signs in college workshops for harmful chemicals and equipment is low. With a grand mean of 2.49 therefore, the answer to research question three is that the extent of observance of HSE procedures in technical colleges in Rivers State is low.

Summary of Major Findings

The findings of the study are summarized as follows:

1. There is not enough safety equipment in workshops in technical colleges in Rivers State.
2. The level of HSE consciousness among students and facilitators in workshops in technical colleges in Rivers State is low.
3. The extent of observance of HSE procedures in technical colleges in Rivers State is low.

DISCUSSION

The findings of the study on research question one revealed that there is shortage of safety equipment in technical colleges in River State. They do not have fire extinguishers and they do not have adequate personal protective equipment for everyone carrying out activities in the workshop. This is in line with the findings of Bulama, Quahha, Tikaand Gayus (2010). The result of the findings on research question two also revealed that the level of HSE consciousness among teachers and students in technical colleges in Rivers State is quite low. Students and teachers alike have little or no idea on what HSE procedures are and so they do not observe these procedures. They are also not conscious of their activities that portend danger and hazard in the workshops. This is in consistent with the findings Greenshield in Akpan (2003) that most college students are ignorant or unaware of the safe method of working and have inadequate knowledge of environmental hazards in workshop.

The findings on research question three further revealed that the extent of observance of HSE procedures in workshops in technical colleges in Rivers State is low. There are no strict enforcement of the use of personal protective equipment, periodic pep talk on safety procedures to be adopted are not given to students and caution signs are not placed on places, chemicals or equipment that have potential to cause hazard. This is in contrast with the Factories Act of the Federal Republic of Nigeria (1990) which states that all safety rules and regulations in workshops and workplace must be enforced to the later to ensure the safety of the students, teachers/instructors and facilities. This finding is also in line with the assertion of Okon (2011) that enforcement of safety practices in technical colleges is the responsibility of all stakeholders in technical college administration. A committed technical education teacher strives to ensure that all safety rules and regulations are strictly obeyed.

CONCLUSION

The need for a careful consideration of safety procedures in workshops in technical colleges is borne out of the fact that activities carried out in these workshops and the equipment used for such activities pose great threat to humans, property and the environment. Even though there is no proper record of incidence of accidents in technical workshops in Rivers State, there is a consensus among teachers/instructors and students in these workshops on the need for the enforcement of safety procedures. This is largely due to the hazards these people are faced with daily in their workshops. This underscores the need for Health Safety and Environment procedures in workshops in technical. Unfortunately, most of these workshops have insufficient safety equipment and in places where they are available, there is no strict enforcement in the use of these equipments by both students and teachers/instructors alike. This is largely due to the low level of awareness among teachers in technical colleges on standard HSE procedures in workplace or workshops as is the case here.

RECOMMENDATIONS

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

1. The Government and other concerned agencies should provide adequate safety equipment in workshops in technical colleges to reduce the incidence and impact of accidents on students and teachers alike.
2. Teachers in technical colleges should be sponsored to attend short term HSE courses with institutions such as the Nigerian Institute of Safety Professionals. This will equip them with the much needed knowledge and skills necessary to be safety conscious and educate their students on safety procedures while in the workshop.

3. Teachers/instructors using workshops in technical colleges should ensure they educate students on safety procedures before practical works are carried out in this workshops every day.

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