Availability and Utilization of Safety Equipment for Skills Training in Technical Colleges in Akwa Ibom State

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ABSTRACT

The study assessed the availability of workshop safety equipment in Technical Colleges in Akwa Ibom State. The population of the study consisted of 126 teachers in the five public Technical Colleges in Akwa Ibom State. A sample of 75 teachers were randomly selected from the Technical Colleges. One research questions was formulated to guide the study and survey design was adopted for the study. The instrument for data collection was a questionnaire and was validated by three experts. The reliability of the instrument was ascertained using Cronbach Alpha statistics which yielded a reliability coefficient of 0.83. Data collected were analysed using mean and standard deviation. The findings of the study showed that Fire extinguishers, Helmets, Hand gloves, Face shields, Safety goggles, Safety footwear, Ear plugs, Coverall, Acoustic foam, Filter respirators, Lightweight respirators, powered respirators, Elbow and wrist supports needed in the five Technical Colleges workshops are not available to support training. Based on the findings of the study, it was concluded that Federal, State, Local government and NGO's should fund and support safety programmes through supply of safety equipment, provision of research grants and textbooks and journals in order to enhance staff good performance in handling safety equipment. The findings of the study future stressed that curriculum reform should emphasize mandatory use of personal protective equipment by technical teachers and students before carrying out any practical work in Technical Colleges workshops in Akwa Ibom State.

KEYWORDS: Technical Colleges, Safety Equipment and Availability

Introduction

The worldwide constant innovative changes have shown that the future is unpredictable especially as it concerns education and technology which is considered as the bed rock of socio-economic, political mobility and growth. In Nigeria today, hardly can a day or week passed without headlines or feature article of accident in the Newspapers. There is need for reforms educational system that will be functional and in reality with the present socio-economic and education in the country (Daniel, 2014). Daniel further stated that the call for these reforms aroused since education is considered to be the instrument needed for our economic transformation and manpower empowerment of the nation.

In Nigeria, Technical College is educational system that equip technical skills in different areas of technological advancement (Edukugho, 2014). It is an asset which leads developing countries to technological advancement (Eze & Okorafor, 2017). Eze and Okorafor further stated that to harness the potential of these future professionals, safety training is desirable. In the same vain, Ezekiel and Enoidem (2009) maintained that in producing students who are highly skilled, the students will typically use the practical training workshop tools and equipment more frequent for their skill acquisition practices which help to strengthen the knowledge acquired by students in the classroom before they enter the real world of work. According to Edukugho (2014), the aspect of safety must be taken into priority as it is an indisputable fact, that wherever work is carried out with machines or hand tools, there is likelihood of accident occurring, causing injuries to people, damages to machines, tools and materials and even death in such a workplace.

This accident may have been caused by the students' actions or negligence in safety precautions. Technical colleges are equipped with a variety of tools and machines for teaching and learning processes are not left out. According to Manfred and Jennifer (2014), technical colleges, which we have high hopes for, need to be protected and prevented from engaging in acts capable of causing accidents. As a result, safety rules and regulations must be devised and enforced for their smooth interaction and operations. Eze and Okorafor, (2017) also stated that workshop safety is the aspect that should be the main focus during practical work in the workshop. They further stated that it should be of great concern not only when doing practical work but also at any time when students are in the workshop.

Safety can be regarded as a habit or as a form of positive attitude. Safety can also be defined according to Manfred and Jennifer (2014) as a condition free from injury, fear, pain or loss which requires appropriate action by all parties. It will not be obtained by itself, but humans have to form a habit of considering it as a priority or not. Edukugho, (2014), posited that the use of safety in the workshop should always be practised to ensure that the students do not take it for granted. Ajayi (2016) also opined that awareness of safety practices in the workshop should be emphasized to teachers and students because we can never know when unfortunate incidents will occur. Thus, the students should make every effort to avoid any accidents in the workshop. Grubb (2015) believes that workshop safety is an aspect that should be the main focus during practical work in the workshop.

The ability of institutions to adapt their educational content to the changing safety skills requirements of the nation is critical to the quality of education and training provided to youths (Daniel, 2014). In other words, Ajayi (2016) believes that educational institutions are expected to provide knowledge, training and facilities that satisfy the human resource demands of the nation’s economy. Availability of instructional facilities is a holistic term which is directed toward education as an entity, while utilization of materials is the process of using procured and accessible facilities, tools, components, equipment, and appliances to make the teaching and learning process easier, interesting, and rewarding. Therefore, availability is the degree to which facilities, service, or functional materials are provided and made ready for use. Haruna (2014) noted that lack of materials and equipment had been significant problems in the Nigerian education system. He further stated that the school system is characterized by the rigidities of a centralized curriculum and a lack of human resources, both of which restrict institutions from attempting more innovations and flexible approaches so as to equip students with the skills to succeed at a time of rapid curriculum change in science and technology. The practice of starving schools of equipment and funds needs to cease (Ajayi, 2016).

Edukugho (2014) stated that students are often exposed to excessive machinery noise, chemical agents which may cause dermatitis, and such airborne contaminants as fumes from welding operations, dust from grinding, and vapours from solvents in the school workshops. Grubb, (2015) also noted that students of technical colleges lack technical skills in the application of safety equipment in workshops as a result of poor training they received in school due to the non-availability of safety equipment for training. This has led to serious hazards which the public now decries. According to Ajayi (2016) and Olunloyo (2011), non-availability of safety equipment is a major problem in technical and vocational education programmes. Manfred and Jennifer (2014) stated that the education ministries, agencies and the schools must constantly identify the safety weaknesses in the implementation of existing safety practices.

According to Daniel (2014), safety in school workshops is very important to avoid the process of teaching and learning being disrupted and reduced in terms of effectiveness. Oranu (2013) believes that safety should be prioritized by teachers as any accidents that occur in the school are the responsibility of the teachers who are present at the time of the incident. Oranu further stated that safety in the workshop will be more complicated if there are too many students using a small space or existing facilities and equipment at the same time. In Nigeria, according to Haruna (2014), there are numerous challenges facing vocational technical education and training which have negatively affected both the teachers' and students' skills acquisition and the availability of safety equipment, which include lack of adequate equipment and training infrastructure, non-uniformity of course content, and a shortage of qualified vocational technical teachers.

Statement of the Problem

Safety in Technical Vocational Education is not just a Nigerian issue. It has been a long time since there has been discourse both in academic and practice. Although the issue in most developing countries like Nigeria has been a question of successful application of programmes like safety in workshop practices. For years, vocational education teachers have been concerned with locating and eliminating, or at least controlling, health hazards in school workshops. But, because health hazards and their destructive impact are often not fully understood, many health hazards exist within school workshops.

Workshop safety are aspects that should be the main focus during practical exercises in the workshop and any time when students are in the workshop. According to Eze and Okorafor (2017), most accidents are caused by human carelessness and rarely occur by themselves. Accidents that occur in the workshop can cause burns, limb deformities and loss of life. As a result, the school, which started out as a place to learn, will become a place with no guarantee of safety. Manfred and Jennifer (2014) posited that to ensure that schools are safe for students to gain knowledge and skills, a study must be conducted to ascertain the availability of safety equipment and how the students practice safety in the workshop. Hence, this necessitated this study which investigated the availability and utilization of safety equipment in workshops in Technical Colleges in Akwa Ibom State.

Purpose of the Study

The purposes of the study were to determine:

1. The availability of workshop safety equipment in Technical Colleges workshops for skill training in Akwa Ibom State.

Research Question

To guide the study, two research questions were asked:

1. What are the workshop safety equipment available in Technical Colleges workshops in Akwa Ibom State?

Methodology

The survey design was used for the study. The study was carried out in five State Technical Colleges in Akwa Ibom State. The population of the study consisted of 126 teachers in the five approved and accredited Technical Colleges in Akwa Ibom State (Source: National Board for Technical Education, 2021). The sample that actually participated in the study consisted of 15 teachers from each of the Technical Colleges totalling 75 teachers who were selected using simple random sampling technique. Data for the study were collected using a questionnaire titled "Availability of Workshop Safety Equipment in Technical Colleges (AWSEBTC) questionnaire". The questionnaire has two parts; Part A was used to elicit information on respondents' demographic data and Part B contains 13 items on availability of workshop safety equipment in Technical Colleges in Akwa Ibom State.

A four-point rating scale of Highly Available (HA), Moderately Available (MA), Lowly Available (LA) and Not Available (NA) was provided for respondents to make their response on the availability of ICT facilities in the Technical Colleges. The cut-off points for the interpretation of the mean of the respondents opinion were Highly Available (3.50-4.00), Moderately Available (2.50-3.49), Lowly Available (1.50-2.49) and Not Available (1.00-1.49).

Face and content validity of the instrument was ascertained by giving the draft copies of the instrument to three experts in Akwa Ibom State University, Ikot Akpaden. Corrections and possible suggestions were offered by the experts after adequate scrutiny of each of the items. This was to ensure that the instrument, measured the intended attributes. In order to ensure the reliability of the instrument, the researchers administered the questionnaire to 30 respondents who were not part of the study but possess the same qualities and characteristics of those used for the study. Cronbach Alpha statistics was used to analyze the data which yielded a reliability coefficient of 0.83. This shows the instrument was reliable for the study. The researchers administered the instrument directly to the respondents in the Technical Colleges with the help of five research assistants who were instructed on what is required. The instrument was collected immediately after completion and yielded 100% return rate.

Data Analysis and Discussion of Findings

Research Question 1: what are the workshop safety equipment available in Technical Colleges workshop in Akwa Ibom State?

Table 1: Availability of workshop Safety Equipment in Technical Colleges in Akwa Ibom State

S/N	Availability of workshop safety equipment in Technical Colleges?	Community Technical College Ikot Akata		Government Technical College, Ewet		Government Technical College, Abak		Government Technical College, Oron		Union Technical College, Ikpa, Eket	
		X	SD	X	SD	X	SD	X	SD	X	SD
1	Fire extinguishers	1.28	0.36	1.39	0.56	1.24	0.86	1.44	0.97	1.29	1.49
2	Helmets	1.22	0.27	1.40	0.59	1.48	0.58	1.31	0.55	1.32	1.56
3	Hand gloves	1.31	0.25	1.33	0.59	1.44	0.49	1.36	0.52	1.43	0.68
4	Face shields	1.20	0.32	1.48	0.76	1.42	1.97	1.48	0.71	1.49	1.94
5	Safety goggles	1.26	0.24	1.30	0.68	1.37	0.55	1.32	0.63	1.43	1.87
6	Safety footwear	1.32	0.25	1.23	1.26	1.45	1.86	1.44	1.28	1.40	1.83
7	Ear plugs	1.25	0.28	1.20	0.75	1.39	2.02	1.39	0.74	1.41	0.36
8	Cover all	1.23	0.40	1.26	0.59	1.33	1.48	1.47	0.52	1.28	0.80
9	Acoustic foam	1.18	0.23	1.45	0.95	1.46	1.80	1.45	0.91	1.45	1.57
10	Filter respirators	1.22	0.38	1.27	0.71	1.37	0.67	1.32	0.76	1.33	1.11
11	Lightweight respirators	1.26	34	1.39	0.69	1.42	1.43	1.29	0.63	1.47	0.97
12	Powered respirators	1.21	13	1.46	1.31	1.49	1.30	1.43	1.37	1.44	1.89
13	Elbow and wrist supports belt	1.16	22	1.32	0.83	1.38	1.80	1.46	0.88	1.36	1.05

Table 1 shows the response of technical teachers on the utilizaton of workshop safety equipment in Technical Colleges in Akwa Ibom State. The result revealed mean score ranging from 1.16 to 1.49 which implies that Fire extinguishers, Helmets, Hand gloves, Face shields, Safety goggles, Safety footwear, Ear plugs, Coverall, Acoustic foam, Filter respirators, Lightweight respirators, powered respirators, Elbow and wrist supports needed in the five Technical Colleges workshops are not available to support training.

Discussion of Findings of the Study

Data in table 1 indicate that workshop safety equipment is not available in all the five Technical Colleges in Akwa Ibom State. This finding is in support of Grubb (2015) and Haruna (2014) who stated that workshop safety equipment is not availability for training of man power in Technical Colleges in Nigeria. Grubb further stressed that non-availability of workshop safety equipment is a major constraint in the implementation of Technical and Vocational Education Programmes curriculum. The findings are also in line with the findings of Eze and Okorafor (2017) who stressed that there is gross inadequacies of workshop equipment, infrastructure facilities, staffing, books and instructional materials in Nigerian Technical Colleges and Polytechnics.

Conclusion

The quality of education and training given to students depends greatly on the ability of institutions to adjust their educational contents to the world changing safety skill requirements. The non-availability of workshop safety equipment in Technical Colleges in Akwa Ibom State has become a menace to teachers and students. Technical Colleges whom we have much hope need to be protected and prevented from engaging in acts capable of causing accidents as a result of negligence to safety precautions. As a result, safety equipment, rules and regulations must be devised and enforced for the smooth interaction

and operations of the Technical Colleges. Hence this paper concludes that the Federal, State and Local government should adequately fund and support safety programmes through the supply of safety equipment, provision of research grants and current books and journals in order to meet the needs required by staff for good performance in handling safety equipment. Future curriculum reform should emphasize the use of personal protective equipment by technical teachers and students before carrying out practical work in the workshop.

Recommendations

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

1. The issue of training and retraining technical vocational teachers is critical in the production and retention of qualified teachers. The training of academic staff should be a continuous exercise to ensure consistent improvement in the quality of technical teachers. The training should be in two folds: training to acquire qualifications required for teaching and continuing professional training. Both types of training can be acquired either locally or overseas.

2. The government should adequately fund and support safety programmes through scholarships, awards, supplying safety equipment, funding/research grants, and providing current books and journals in order to meet the needs required for staff good performance in handling safety equipment.

3. Future curriculum reform should emphasize the use of personal protective equipment by technical teachers and students before carrying out practical work in the workshop.

4. Government/private secondary school owners should employ technical support staff to help teachers operate safety equipment until the teachers get used to the equipment.

REFERENCES

Ajayi, I. A (2016). Assessing the realities and challenges of technical education in Imo State Secondary School Education System. *Nigerian Journal of educational Administration and Planning.* 3 (7) 43-58.

Daniel, N.S. (2014). African Education in the Twenty-First Century: The challenge for Change. *Journal of International Cooperation in Education* 14 (1), 21-38.

Edukugho, E. (2014, November, 25). *The use of safety in workshop.* The Vanguard, p.5

Eze, T. I. & Okorafor, O. A. (2017). Trends in technical, vocational education and training for improving the Nigerian workforce. *Ebonyi Vocational and Technology Education Journal.* 1(1), 107-115.

Ezekiel, O. A. and Enoidem. B. U, 2009. Recreating vocational education for self-reliance and productivity. *Journal of Qualitative Education,* 5(3): 89-94.

Grubb, N. (2015). The convergence of education Systems and the role of vocationalization. comparative education review, 29(4), 30-46.

Haruna, J. O. (2014). Availability and utilization of instructional materials and equipment for teaching and learning in Kaduna Polytechnic. *Journal of Nigeria Association of Teachers of Technology* 7(1), 25-34.

Manfred, T and Jennifer, W. (2014). *Vocational education and training key to the future*. Greece: Colibri Ltd.

Olunloyo, V. O. S. (2011). *The challenges of Globalization for the design of technical curriculum in developing countries*. 1st Ed. University of Lagos Press, 217 – 237.

Oranu, R. N. (2013). *Vocational and technical education in Nigeria*. Retrieved from: http://www.ibe.unesco.org/curriculum/AfricaPdf/lago2ora.pdf.