Availability and Use of Safety Equipment for Training Skills in Technical College in Akwa Ibom State

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ABSTRACT

The study assess the availability and use of safety equipment in workshops in technical colleges in Akwa Ibom State. The population of the study consist of 373 teacher in the six public technical colleges in Akwa Ibom State. A sample of 148 teachers was randomly selected from these technical colleges. Two research questions were formulated to guide the study. The instrument for data collection was a questionnaire and was first validated by three experts. The reliability of the instrument was ascertained using Cronback's alpha reliability coefficient for Likert type scales which yielded a reliability collected coefficient result of 0.83. Data collected were analysed using mean and frequency counts. Result shows that safety equipment in technical colleges in Akwa Ibom State was not always available to support training and that teachers do not use safety equipments during training. Based on the findings of this study, it was recommended among others that training of academic staff should be a continuous exercise to ensure consistent improvement in the quality of technical teachers and government at all levels should be adequately funded and supported for safety programmes through scholarship awards, supply of safety equipments, finding of research programmes and works through grants, provide current books and journals in order to meet the required needs for competent staff performance in handling safety equipments.

KEYWORDS: Availability, safety equipment, technical colleges, skills training; vocational education, programmes.

Introduction

The worldwide constant innovative changes have shown that the future is unpredictable especially as is concern education and technology which are considered as the bedrock of socio-economic, political mobility and growth (Daniel, 2014).

In Nigeria today hardly can a day or week pass without headlines or feature article about accident in the newspapers. The issues discussed had always been of the need for reforms that will be functional in reality and not a dream. The call for these reforms arises for a long time as education itself since education is considered to be the instrument needed for our economic transformation and manpower development.

Technical college is one of the branches that will release the potential skills of technical talent from technical field into the world (Edukugho, 2014). It is an asset which will lead developing countries towards a more technological advancement hence, (Eze and Okorafor, 2017) stated that to produce the potential of these feature professionals, highly skills technical training is desirable. Ezekiel and Enoidem (2009) maintained that in producing students who are highly skilled, the students will typically use the practical training workshop more frequently for their skill acquisition practices. This acquired by students in the classroom before they entre the real world to work. According to Edukugho (2014) safety must be taken as top priority given the fact that wherever work is done with machines or hand tools, there is a likelihood of accident occurring, which might cause injuries to people, damages to machines, tools and materials and even death in such a workplace. This accident may be caused by the workers acts of commission or omission.

Technical colleges being equipped with variety of tools and machines for teaching and learning processes are not left out. According to Manfred and Jennifer (first names) 2014) schools full of young people whom the society have much hope needed to be protected and prevented from engaging in acts capable of causing accidents. As a result, of safety rules and regulations must be devised and enforced for possible smooth interaction and operations. Eze and Okarafor (2017) also stated that workshop safety is the aspect that should be the main focus during practical works in the workshop. They further stated that it should be of great concern not only when doing practical work, but also at anytime when students are in the workshop.

Safety can be regarded 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 the human has to form a habit whether to consider as a priority or not. Edukugho (2014) posited that the use of safety in the work shop should always be practiced 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 the teachers and students because we can never know when unfortunate incidents may occur. Thus, the students should make every effort to avoid any accident in the workshop. Grubb (2015) believed that, workshop safety is an aspect that should be the main focus during practical work in the workshop.

The quality of education and training given to youths depends greatly on the ability to institutions to adjust their educational contents to the changing safety skills required of the nation. Daniel (2014) in other words Ajayi (2016) believes that educational institution are expected to provide knowledge, training and facilities that satisfy the human resources 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 using procured and accessible facilities, tools, components equipment and appliances to make teaching and learning process easier, interesting and rewording. Availability is the degree to which facilities, services or functional materials are provided and made ready for use.

Haruna (2014) notes that lack of materials and equipment has been a significant problem in the Nigerian education system. He further states that the school system is characterize by the rigidities of centralized curriculum and a lack of human resources which restricts institutions from attempting more innovations and flexible approaches so as to equip students with skills to succeed at a time of rapid curriculum change in science and technology. According to Ajayi (2006), the practices of starving schools of equipment and funds need to cease Ajayi, (2016).

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 often are not being fully understood. Many health hazards exist within the school workshops. Edukugho (2014) stated that students who have to learn in school workshops are often exposed to excessive machinery noise, chemically agents which may cause dermatitis, and such airborne contaminants as fumes from welding operations, dust from grinding and vapour from solvents. Grubb (2015) also noted that students of Technical Colleges lack technical skills in application of safety equipment in workshop as a result of poor and inadequate training they received in school owing to non-availability of safety equipments for the trainings. These as led to serious hazards which the public now devices. Non-availability of safety equipment Ajayi (2016) stated is the major problems in technical and vocational education programmes. This position necessitated the study which investigated the availability and usage of safety equipment in Technical Colleges workshop in Akwa Ibom State.

Safety in Education: A perspective of Nigerian Technical Colleges.

Safety in Technical Vocational Education is not just a Nigerian issue. It has been a longstanding discourse both in academic and private practices.

Although the issue in most of the developing countries like Nigeria has been a question of successful application of programmes like safety in workshop practices Olunloyo (2011), Eze and Okorafor (2017) workshop safety are aspects that should be the main focus during practical's in the workshop, and at any given time that students are in the workshop. Eze and Okorafor further opined that most accidents are caused by human factor carelessness and rarely occur accidentally. Although some efforts have been made, workshop accidents still happen especially when carrying out practical's works in workshop.

Accidents that occur in the workshop can cause burns, limb deformatives and loss of life. This can make the school that at first plays the role as the place to gain knowledge becomes a place that does not have safety guarantee. Manfred and Jennifer (2014) posited that to ensure that a school is safe for the students to gain knowledge and skills, a study must be conducted to ascertain the availability of safety equipment and how the students practices safety and put up safe habits in the workshop. They further suggested that education ministries, agencies and the schools must constantly identify safety as part of our lives. Accidents can be avoided or reduced if students are always aware of safety precautions.

According to Daniel (2014), safety in school workshop is very important to avoid the processes of teaching and learning being disrupted and reduced in terms of its effectives. Usually, the teacher will provide sufficient information and explanation on safety practices and actions to be taken before a practical work is being carried out. Oranu (2013) believe that safety

should be prioritized by teachers as any accidents that occur in the school are the responsibility of the teachers who are at the place of incidents.

He further stated that safety in the workshop will be more complicated if there are too many student using a small space or existing facilities and equipments at the same time. In Nigeria, according to Harune (2014), there are numerous challenges facing vocational technical education and training which has negatively affected the teacher, student skill acquisition and availability of safety equipments. These include:

LACK OF ADEQUATE EQUIPMENTS AND TRAINING INFRASTRUCTURES

Most vocational technical departments in or higher institutions do not have well equipped laboratories, workshops and useable infrastructures. Where these exist, they are grossly inadequate, absolete on a dilapidated state. Haruna (2014) further posited that what is seen and referred to as Vocational Technical education laboratories in various institutions today are eye-sores as the laboratories only have items or equipment that were provided by at the point the departments were established. It is however a statement of fact that most Vocational Educational Departments still depend on engineering workshops and lecturers to teach vocational and technical education courses. However the country turned into producing insufficient, non unqualified and ill prepared vocational education graduates who ordinarily are supposed to be the devoting force for the economical and industrial transformation of the country as experienced in the developing countries like China and Turkey etc.

Non-Uniformity of Course Contents

Most of the Nigeria universities and colleges that offer Vocational Technical education programme do not have uniform course contents this usually creates problems for students who may wish to transfer to another institution to complete their studies. This disparity in course content of the vocational technical education programme in Nigeria Universities and colleges possess a great challenge for the standardization of the VTE prgrammes. Haruna (2014) further opined that effective vocational technical education can only be achieved where the training on the jobs are carried out, with the same tools and machines as existing in the industry itself. This means that vocational and technical education will be efficient and effective in proportion to the environment in which the learner is trained. To achieve this, a well planned and organized environment in imperative for the students to learn.

Shortage of qualified vocational technical teachers

Mary territory institutions across the country are inadequately staffed both qualitatively and quantitatively. In most departments especially in vocational technical education (VTE) programmes, the number of qualified (VTE) teachers for each specialized area is in short supply. It is an indisputable fact that without quality (VTE) teachers, practical works which is an essential component of VTE programme will be difficult to implement. Acquisition of skills requires that strict attention and supervision should be given to every student. In other words individualized instruction become very difficult during practical's due to shortage of qualified VTE teachers and this affects performance of both the teachers and students as teachers are made to teach many VTE courses. Many people who are qualified to teach VTE courses have abandoned teaching for other jobs they fill are better and prestigious for a better remuneration.

Methodology:

The survey design was used for the study. The study covered the six technical colleges in Akwa Ibom State. The population of the study consisted of three hundred and seventy three (373) teachers in the six Public Technical Colleges in Akwa Ibom State (Source: State Technical Schools Board, Planning, Research and Statistics 2016-2017). The sample that actually participated in study consist of 148 teachers who were selected using simple random sampling technique. Data for the study were availability of safety equipments in Technical college workshops. Part c contains 13 items on how often teachers use safety equipments in workshops during skills training. A four point rating scale of always available (AA) sometimes available (SA) 3 rarely Available (RA) 2 Not available (NA) 1 was provided for the respondents to make their responses in research question I while very frequent (VF), sometimes frequent (F) sometimes (S) not at all (NAA) was provided for the respondents to make their responses in research questions 2. In answering the research question I, items with mean score of 3.0 and above were considered as being available. While items with mean scores below 3.0 considered as frequently used.

The face validity of the instrument was ascertained by giving the draft copies of the questionnaire to two experts in vocational educational department University of Uyo and one expert from Akwa Ibom Sate University. Corrections and possible suggestions were offered by experts after adequate scrutiny of each item. This was to ensure the reliability of the instrument, the researchers administered the questionnaire to 20 respondents who were not part of the study. But possess the same qualities of those used for the study.

Cronbach's Alpha reliability technique as described by Ghien amd Ghein (2003) was used to analyse the data collected 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 residents in the technical colleges with the help of two assistants who were instructed on what was required.

The instrument was collected immediately after completion. The instruments were duly completed and returned for use in data analysis.

Results

Research Question I:

To what extent are safety equipments availability in the technical colleges workshop in Akwa Ibom State?

Table I: Mean rating of respondents on availability of safety equipments in technical colleges workshop in Akwa Ibom State.

Table I: Shows that all the thirteen (13) safety equipment needed in technical college workshops are not available to support training: their means scores range from 1.30 to 2.86 with a total mean of 1.75 which is less than the cut-off point of 3.0

S/N	To what extent are the following safety equipment availability in your technical colleges workshop	Always available (AA) 4	Sometimes Available (SA) 3	Rarely available (RA)2	Not Available (NA) 1	Total	Mean	Decision
1.	Fire extinguishers	28	36	28	56	424	2.86	NA
2.	Helmets	22	27	40	59	308	2.08	NA
3.	Hand gloves	31	25	33	59	324	2.19	NA
4.	Face shields	20	32	20	76	292	1.97	NA
5.	Safety goggles	26	24	30	68	304	2.05	NA
6	Safety footwear	32	25	23	26	275	1.86	NA
7.	Ear plugs	25	28	20	75	299	2.02	NA
8.	Cover all	23	40	26	59	323	2.18	Na
9.	Acoustic Foam	18	23	15	95	266	1.80	NA
10.	Filter respirators	22	38	17	71	307	2.07	NA
11.	Lightweight respirators	26	34	19	69	212	1.43	NA
12.	Powered respirators	21	13	19	31	192	1.30	NA
13.	Elbow and Wrist support belt	16	22	27	83	267	1.80	NA
	Total	**310**	**367**	**317**	**827**	**3793**	**1.75**	**NA**

Research Question 2

How often do teachers use safety equipment during skill training in technical Colleges Workshop?

Table 2: Is on the frequency of use of safety equipment during skill training in technical college workshops. Information on the table revealed that 195 respondents used various safety equipment very frequent, 186 respondents used the equipment frequent, and 291 respondents sometimes used some of the equipment while 1252 respondents do not used safety equipment at all for skill training in technical education workshops.

s/n	Safety equipment	Very frequent (VF)	Frequent (F)	Sometimes (S)	Not at all
1	Fire extinguishers	-	-	9 (6.1%)	139 (93.9%)
2.	Helmets	20(13.5%)	38(25.7%)	43 (29.1%)	47 (31.8%)
3.	Hand gloves	22(14.9%)	33(22.3%)	38(25.7%)	55(37.2%)
4.	Face shields	19(12/8%)	12(8.1%)	23/15/5%)	94(63/5%)
5.	Safety goggles	34(23.0%)	26(17.6%)	34(23.9%)	54(36.5%)
6.	Safety footwear	39(26.4%)	31(20.9%)	48(32.4%)	30(20.3%)
7.	Ear plugs	13(8.8%)	9(6.1%)	17(11.5%)	109(73.6%)
8.	Cover all	44(29.7%)	27(18.2%)	38(25.7%)	39(26.4%)
9	Acoustic foam	-	2(1.4%)	11(7.4%)	135 (91.2%)
10.	Filter respirators	4(2.7%)	7(4.7%)	23(15.5%)	114(77.0%)
11.	Lightweight respirators	-	1(0.68%)	5(3.4%)	142(96.0%)
12	Powered respirators	-	-	-	148(100%)
13.	Elbow and wrist support belt	-	-	2)1.4%)	146(98.6%)
	Total	**195**	**186**	**291**	**1252**

Discussion of the findings

Data in table 1 showed unavailability of safety equipments as follows: fire extinguishers with a mean of 2.8, helmets 2.08, hand gloves 2.19 face shields 1.97, safety goggles 2,05, safety footwear 1.86 and ear plugs 2.02. Others include over all 2.18, acoustic foam 1.80, filter respirators .07, light weight respirators 1.43, powered respirators 1.30 and elbow and wrist support belt 1.80.

The rate also showed a total mean of 1.75 indicating non availability of all the thirteen (13) safety equipment compared with the acceptable mean of 3.0. these findings support Grubb (2015) and Haruna (2014) who indicated that non-provision or unavailability of workshop equipment is a major constraint in the implementation of technical Vocational Education Programmes. The findings are also in line with the findings of Eze and Okorafor (2017) which reported gross inadequacies of workshop equipments, infrastructural facilities, staffing, books and instructional materials in technical Colleges and Polytechnics. Also, data in table 2 showed

that the respondent do not use the following safety equipments fire extinguishers 1.39 (93.9%) helmets 47 (31.8%), hand gloves 55 (37.2%) face shields 94 (63.5%), safety goggles 54(36.5%) and ear plugs 109 (73.6%) others include acoustic foam 135 (91.2%), respirators 114 (77.0%) light weight respirators 142 (96.0%) powered respirators 148 (100%) and elbow and wrist support belt 146(98.6%) while 39(26.4%) and 44 (29.7%) use safety footwear and coverall very frequently respectively. The findings of the study are in line with the study of Oronu (2013) and Harunas (2014) who observed that in many technical colleges, laboratory and workshop equipments were not properly used and maintained. Lack of safety equipments in technical colleges can lead to the training of half-baked students; therefore there is need to adequate provide safety equipment for use during workshop training instead of providing such materials only during external examinations which seems to be the case now and does not help the situation.

Conclusion

There are many issues regarding availability and use of safety equipment in technical colleges in Akwa Ibom state. The results show that there is insufficient availability and use of safety equipment. There are several current issues that have to be addressed as they are very crucial to safety and development of the nation. The federal, the state and the local government even private organizations should equally get involved and give attention and concern to availability and use of safety equipments in workshop in all issues mentioned and come up with strategic plans, policies and method of practices for Vocational Technical Education development and growth. Effective policies and implication of safety practices of safety in VTE would bring about better economic development of the nation. Nigeria should begin now to invest very seriously in vocational and technical education trade and becomes not only the most populous but also the most competitive in policy formulation availability and use of safety equipment in technical colleges country in Africa.

Recommendations

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

1. The issue of training and retraining of technical vocational teachers is critical in the production and retention of qualified teachers.
2. The training of academic staff should be a continuous exercise to ensure consistent improvement in the quality of technical teachers.
3. 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 wither locally or abroad.
4. Government should adequately fund and support safety programems through scholarship awards, supply of safety equipments, findings, research grant and provision of current texts books and journals in order to meet the needs required for good staff performance in handling safety equipments.
5. Future curriculum reform should be emphasized and the use of personal protective equipments by technical teachers and students before carrying out practical work in the workshop. Government and private secondary schools owners should employ technical supporting staff to help teachers operate safety equipments until the teachers get used to the technical safety equipment.

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