



APPRAISAL OF SAFETY PRACTICES AT THE FASHION DESIGN AND TECHNOLOGY DEPARTMENT OF TAKORADI TECHNICAL UNIVERSITY

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Abstract:

The importance of safety at the workplace cannot be overemphasized. The research was conducted at the Fashion Design and Technology department of Takoradi Technical University. Unfortunately, many safety precautions are overlooked with time. Users of sewing equipment and tools tend to believe they have gained enough experience over time with regard to handling same, so refuse to protect themselves with any protective gadgets. This study was therefore to identify the need for safety in the above-mentioned department through general risk assessment, examining what safety measures and practices were being followed, and the effect of accidents on work performance by examining some performance enhancers. The paper adopted the descriptive approach in analyzing issues. Primary data were obtained for analysis using questionnaire, in addition to some secondary sources of data. It was found out that some limited amount of security measures was observed. It was generally agreed that accidents or failure to observe safety practices resulted in delayed or uncompleted assignments. The major complaints included limited classroom space and workshop space, and inadequate sewing equipment for numerous students which impeded supervision and learning. It was recommended that the production unit (workshop) and classrooms be spacious and equipped with modern working equipment.

Keywords: Safety; Appraisal; Risk; Accidents; Production Unit.

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1. Introduction

Safety is the state of being safe, the condition of being protected from harm or other non-desirable outcomes. Safety can also refer to the control of recognized hazards in order to achieve an acceptable level of risk. It is important to realize that safety is relative. Eliminating all risks, if even possible would be extremely difficult and very expensive. A safe situation is one where risk of injury or property damage is low and manageable. (en.wikipedia.org).

Safety is the condition of a 'steady state' of an organization or place doing what it is supposed to do. For any organization, place or function, large or small, safety is a normative concept. It complies with situation-specific definitions of what is expected and acceptable (en.wikipedia.org/wiki-safety). It is safe to assume that most employers consider their employees to be their most important asset. That is why it is so important for employers to protect workers from hazards or potential hazards in the workplace.

The occupational safety and health provisions in the Labour Act (Act 651) requires employers to provide a workplace that is free from recognized hazards that are causing or are likely to cause death or serious physical harm to employees. To achieve that end employers should develop a comprehensive safety and health plan. In today's litigation society, organizations cannot afford to be ignorant regarding occupational safety. Further, if companies want to maintain a positive employer brand and reputation, safety is key.

It is noteworthy that every effective safety plan has four main key elements namely: management commitment and employee involvement; worksite analysis (risk assessment); hazard prevention and control; and training and education. The most recent data from the Bureau of Labor statistics indicate that in 2003 more than 4.3 million people were injured on the job and 5,559 were killed. Currently, the national average per 100 workers is 2.6 workplace injuries or illnesses that are serious enough to result in lost workdays. The cost of occupational accidents was estimated to total \$49.6 billion in 2002. All levels of government have passed numerous laws to regulate workplace safety. Many of these laws include detailed regulations dealing with work hazards in specific industries such as coal mining and railroads (Balkin et al 1992).

According to Barling et al (1995), cited in Stuhlmacher and Cellar (2001), workplace safety is a critical topic for study, and that an alarming number of workplace safety accidents and incidents occur daily. Barling (1995) further estimated that in the United States each year, there are 100,000 work-related accidents or disease fatalities, 400,000 workers that become disabled, and 6 million employees suffering workplace injuries.

It is important to recognize that in addition to these direct challenges, there is also the challenge of employee commitment to safety and health programs. Schneid (2014) added that safety does not belong to the safety and health professional and that safety and health function, although with different levels of responsibilities belongs to everyone within the organization. Schneid (2014) again pointed out that the safety and health function requires all employees at all levels in the hierarchy of the organization to be active participants in various aspects of the safety and health function. Many organizations face the problem of employees ignoring and even being hostile to safety and health measures. The reason: Employees often view safety and health measures as intrusive and inefficient (Balkin et al 1992).

Top managers can show general commitment to safety and health programs by explaining to supervisors and others the rationale for relevant safety and health practices. It is important that everyone understand the cost of accidents to the organization. Recent research supports the value of taking a participative approach to the improvement of safety and empowering workers to manage and solve their own safety programs.

Comprehensive safety programs are well-planned efforts in which management:

- involves employees and carefully consider their suggestions;
- communicates safety rules to employees and enforces them;
- invests in training supervisors to demonstrate and communicate safety on the job;
- uses incentives to encourage safe behavior and discipline to penalize unsafe behaviors; and engages in regular self-inspection and accident research to identify and correct potentially dangerous situations (Dessler 200)

With all the awareness of injuries to workers' health, there are still employers who seem to take safety less seriously than they should. Congress passed the Occupational Safety and Health Act (OSHA) in 1970 to assure as far as possible every working man and woman in the nation safe and healthful working conditions and to preserve our human resources.

Top management should be personally involved in safety activities; give safety matters high priority in meetings and production scheduling; give the company safety officer high rank and status; and include safety training in new workers' training. Ideally, "safety is an integral part of the system, woven into each management competency and a part of everyone's day-to-day responsibilities." In addition top management (usually working through human resource management) should:

- Institutionalize management's commitment with a safety policy, and publicize it.
- Analyze the number of accidents and safety incidents and then set specific achievable safety goals.

There are three basic causes of workplace accidents including: chance occurrences; unsafe conditions; and employees' unsafe acts. The unsafe actions include: improperly guarded equipment; defective equipment; hazardous procedures in, on or around machines or equipment. The rest are unsafe storage in the form of congestion and overloading; improper illumination – glare, insufficient light; improper ventilation – such as insufficient air, impure air source (Clarke 2008)

Getting employees to wear personal protective equipment can be famously difficult chore. Getting employees to wear protective equipment is important. In addition to providing reliable protection and durability, protective gear should fit properly; be easy to care for, maintain and repair; be flexible and lightweight; provide comfort and reduce stress; have rugged construction (Dessler 2008).

Safety training is another way to reduce unsafe acts, especially for new employees. You should instruct them in safe practices and procedures, warn them of potential hazards, and work on developing a safety conscious attitude. By reducing unsafe acts through motivation, safety posters can apparently increase safe behavior but they are no substitute for safety programs. Employers should combine them with other technique and change the posters often (Sherman 2001).

2. Materials and Methods

The study adopted the descriptive approach in the form of cross sectional survey design in analyzing issues. This method was preferred because it takes care of accessible respondents and

helps eliminate biases in the choice of respondents. Through the purposive sampling approach the researchers chose the second year students from the Fashion Design and Technology department as the target population. However, the random sampling method was used to select the sample size of 50 students out of 68 of which 42 responded by filling out the questionnaire. In addition, six (6) lecturers and one (1) technician from the same department formed part of the sample size. These were also chosen at random based on their availability at the time of questionnaire distribution. Since some students did not turn in their filled questionnaire, there was not a 100% response rate. Based on this there were 49 respondents altogether. The response rate was 73.7%.

3. Results and Discussions

The purpose of this study was to do a critical appraisal (assessment) of safety at the Fashion Design and Technology department of Takoradi Technical University with regards to the need for safety, safety measures and practices and the occurrence of accidents and their general effects on students' and lecturers' performance.

Table 1: General risk assessment.

Items		Frequency	Percent
1. Workshop operations posing risks:	Yes	12	24.5
	No	37	75.5
	Total	49	100.0
2. Risk-prone areas:	Cutting	14	28.6
	Ironing	8	16.3
	Arrangement of machines & tables	7	14.3
	Sewing		
	Threading	17	34.7
	The floor	2	4.1
		1	2.0
Total		49	100.0
3. Needle pricks:	Yes	17	34.7
	No	32	65.3
	Total:	49	100.0
4. Cutting risks:	Finger cuts	4	8.2
	Wrongful cutting of fabrics	24	49.0
	Dropping scissors by accidents	8	16.3
	Inhaling fine dusty particles	13	26.5
	Total	49	100.0
5. Ironing risks:	Burns	15	30.6
	Electrical shocks	3	6.1
	Overheated iron	23	46.9
	Burning or shrinking fabrics	8	16.3
	Total	49	100.0
Multiple responses			

Source: Field survey 2016

Table 1 reveals some common risks that were discovered at the Fashion Design and Technology department. Though some respondents (24.5%) accepted that workshop operations posed risks, as many as 75.5% of the respondents objected to it. While only 2% of respondents thought that the floor posed much risks, 34.7% associated the highest risk to sewing. As many as 65.3% of respondents agreed the risks involved being pricked by needles, while 34.7% disagreed. Another type of risk identified was related to cutting of fabric to which 49.0% associated it to wrongful cutting with just 8.2% objecting to that. Again, 46.9% of respondents expressed overheating of the iron as risk and 6.1% stated electrical shocks as another kind of risk.

Table 2: Safety measures and Practices

Item		Frequency	Percent
Availability of safety equipment:	Yes	12	24.5
	No	37	75.5
Total:		49	100.0
For Yes, type of equipment available:			
	Fire extinguisher	6	50.0
	Exit route	5	41.7
	Other	1	8.3
Total		49	100.0
Safety training sessions:	Yes	9	18.0
	No	40	82.0
Total		49	100.0
For Yes:	Every semester	6	66.7
	Annually	3	33.3
Total		9	100.0
Lighting system:	Very good	13	27.0
	Fairly good	28	57.0
	Poor	8	16.0
Total		49	100.0
Servicing of machines:	Yes	13	26.0
	No	18	37.0
	I don't know	18	37
Total		49	100.0
For Yes:	Regularly	2	15.4
	Only when needed	7	53.8
	Hardly	3	23.1
	Not certain	1	7.7
Total		13	100.0
Good ventilation:	Yes	28	57.0
	No	21	43.0
Total		49	100.0

Comfortable chairs and tables:	Yes	9	18.0
	No	40	82.0
Total		49	100.0
Fabrics & tools put together:	Yes	7	14.3
	No	42	85.7
Total		49	100.0
Arrangement of machines:	Very well arranged	9	18.4
	Fairly well arranged	17	34.7
	Poorly arranged	23	46.9
Total		49	100.0
Availability of thimbles:	Yes	23	47.0
	No	26	53.0
Total		49	100.0
Nose masks available:	Yes	18	37.0
	No	31	63.0
Total		49	100.0
Separate ironing board:	Yes	22	45.0
	No	27	55.0
Total		49	100.0
Floor cleaning:	After every practical lesson	8	16.3
	Every hour	6	12.3
	At the end of the day	35	71.4
Total		49	100.0

Source: Field survey 2016

Table 2 discusses safety measures and practices that are observed or not observed by the Fashion Design and Technology department. While as many as 75.5% said there was no safety equipment, 24.5% agreed there were safety equipment such as fire extinguisher and exit route with percentages of 50.0% and 41.7% respectively. Only 18.0% indicated that the department organizes training sessions. However, 82.0% did not admit this. Out of those who said training sessions were organized, 66.7% said it was done every semester while 33.3% said annually. Respondents' comments on the lighting system were that 57.0% said it was fairly good, 27.0% accepted that it was very good and 16% said the lighting system was poor. 36.0% of respondents knew that the sewing machines were serviced and 37% did not agree, 37.0% also did not know at all about servicing of the machines. Out of those who agreed that the machines were serviced, 53.0% said it was done only when the need be. With regard to ventilation, 57.0% agreed the department had good ventilation. As many as 82.0% said the chairs and tables in the department were not comfortable to use. With reference to the storage of fabrics and tools 85.7% of respondents said they were kept and stored separately for safety reasons. Also, 46.9% said the machines were poorly arranged and 18.4% said the machines were very well arranged. 53.0% of respondents

confirmed the Fashion Design and Technology department had thimbles, 63.0% said nose masks were not provided. And 55.5% of respondents also confirmed that the ironing table was also used as cutting table.

Table 3: Performance enhancers

Items		Frequency	Percent
Easy access to working materials:	Yes	8	16.3
	No	41	83.7
Total		49	100.0
Delivery of requisition from stores:	Quick	6	12.0
	Delayed	24	49.0
	Fairly timely	19	39.0
Total:		49	100.0
Free access to the workshop:	Yes, every time	12	24.0
	No, not all the time	37	76.0
Total:		49	100.0
Meeting deadlines for practical assignments:	Yes	4	8.0
	No	25	51.0
	Sometimes	20	41.0
Total:		49	100.0
Availability of modern machines:	Yes	22	44.9
	No	27	55.1
Total:		49	100.0
For Yes: (out of 22 respondents)	Recently	13	59.0
	Unknown	9	41.0
Total:		49	100.0
Halting work progress due to accidents:	Yes	37	76.0
	No	12	24.0
Total:		49	
Effects of accidents:	Uncompleted assignments	26	53.0
	Delayed assignments	23	47.0
Total:		49	100.0

Source: Field survey 2016

Table 3 represents performance enhancers. The items can either contribute to enhancing performance or their absence can cause a lot of defects. Responses to easy access to working materials were that only 16.3% of the respondents agreed that access to working material was easy. On the contrary, as many as 83.7% of them admitted that access to working materials was not easy.

The rate of delivery of working materials according to 12.0% of respondents was quick, 39.0% said it was fairly timely while the majority constituting 49.0% felt that delivery was rather delayed. According to 24.0% of respondents they had free access to the workshop whereas 76.0% said they did not have free access all the time. Regarding meeting deadlines for practical assignments, those who answered in the affirmative constituted only 8.0%, 51.0% responded they could not meet deadlines while 41.0% said it was only sometimes. As to whether the department was stuffed with modern machines, 44.9% of respondents said yes while 55.1% disagreed to it, 59.0% of those who answered yes confirmed it was only recently that the department was stuffed with modern machines. It was generally agreed by 76.0% of respondents that accidents in the department halted the progress of work while 24.0% thought otherwise. Again, it was generally agreed by 53.0% that accidents resulted in uncompleted assignments while 47.0% accepted that accidents delayed assignments.

The need for safety at the Fashion Design and Technology department was revealed through the general risk assessment conducted. The results revealed that some operations at the department posed some amount of risk to the users of the departmental workshop. It was discovered through the study that sewing posed the most risk to the respondents. Some of the risks found associated with cutting included finger cutting, wrongful cutting of fabrics, mistakenly dropping scissors, inhaling fine dusty particles and other ironing risks. It is advised for users and for that matter sewers to keep fingers away from the path of the sewing machine needle. Pass scissors and other sharp objects with the handle toward the other person (Black 2004). The iron must rest on its heel, to avoid burns, hands must be kept away from the hot area of the iron (Black 2004). With the availability of some amount of nose masks it reduced the amount of fine dusty particles inhaled by the sewers.

With regards to safety measures and practices, factors considered were availability of thimbles, arrangement of machines, lighting system, ventilation among others. The lighting system at the department of fashion was described as fairly good. It is recommended that the sewing area should be well lit to avoid eye strain (www.craftsy.com). Again, good lighting is important to sewing success (www.sewing.org). It came out that the arrangement of machines was poorly done. However, ventilation was relatively better. The results proved that fabrics and sewing tools were not put together. This happens to be a very good safety practice since it minimizes the danger of one getting hurt by some sharp instrument that may be folded with a fabric. The study revealed that chairs and tables at the department were not comfortable to use. It is advised for sewers to consider the ergonomics of the sewing table and chair. If the sewing machine is too high it will cause strain on your back. According to Cook (1987), the sewing table must be firm enough to support the sewing machine which vibrates in use. It should, if possible, be at least 54 inches wide, for ease when cutting out; and sufficiently large to hold the garment being made and the tools in use. It was also discovered that some amount of thimbles was used at the department. This happens to be a panacea to frequent finger cut. A few number of respondents agreed that the sewing machines were serviced and the majority of those who confirmed it said the servicing was done only when the need be. It is suggested that machines should be serviced every year or two (Black 2004). It came to light that cleaning the floor was at the close of the day. Sewers often disagree about the best flooring options. The choice depends on your sewing and cleaning style – pins are easier to find on hard-surface flooring. It was quite obvious that safety training sessions were lacking in the department. It must be emphasized that safety training is another way to reduce

unsafe acts, especially for new employees (Sherman 2001). In safety practices, posters can apparently increase safe behavior but they are no substitutes for safety programs. According to the study some safety equipment such as fire extinguisher was available and exit routes were provided. It is again recommended that top management be personally involved in safety activities; give safety matters high priority in meetings and production scheduling; give the company safety officer high rank and status; and include safety training in new workers' training (Dessler 2008).

On the performance enhancers, the following factors were considered. The survey revealed that majority did not have easy access to working materials and their delivery was more often delayed. This means that work was hampered. Again, the majority did not get access to the workshop all the time. It therefore became obvious that meeting deadline for practical assignments was not always possible. The study also showed that the department was stuffed with some modern machines and that the latest was received not long ago. It was admitted that in case of accidents, progress of work became halted. Unfortunately, accidents happened to affect them such as uncompleted assignments and delayed assignments.

According to the respondents, some of the major impediments included: power outages; delay in the supply of materials; small lecture halls; lack of working materials; inadequate sewing machines for students; large number of students making supervision difficult; delayed training materials among others.

4. Conclusions and Recommendations

The following conclusions were drawn from the findings. A wide range of risk posed threats to users of the Fashion Design and Technology department of Takoradi Technical University. Agreeably, the department practices a reasonable amount of safety including the provision of acceptable measure of ventilation, provision of nose mask, servicing of machines, and the availability of safety equipment. Moreover, lack of easy accessibility to the work shop, working material and its delay as well as accidents affected output of work.

It is recommended that all safety measures be observed, specifically; improvement in the lighting system; provision of safe and comfortable furniture, as well as separating ironing board from the cutting table. It is also recommended that servicing of machines and increase and improvement in the provision of safety equipment be encouraged including the provision of instructional manuals, and posters. And above all safety training should be taken more seriously.

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