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Identify hazardous situations to work more productively

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ARTICLE INFORMATION

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ABSTRACT

In carrying out social activities, identifying potential hazards is important to achieve safety, health, and welfare. Recognizing and identifying hazards is one of the efforts that need to be made to work more productively. In addition, by recognizing and identifying hazards we can know about hazardous situations that may not have been predicted. Therefore, recognizing and identifying hazards needs to be done by every individual. Based on these problems, awareness of the importance of occupational safety and health is needed. This awareness can be increased through knowledge of the types of hazards in the surrounding environment. Therefore, there is a need for training on the types of hazards needed to identify hazards. Identifying hazards needs to be done to determine appropriate risk controls. Training activities to recognize hazards in the surrounding environment have been effective in increasing the level of understanding of participants. The results of the participants' safety awareness test were tested using the wilcoxon signed the rank test method to see whether there was a difference in the level of safety awareness before and after the education. This statement is proven by the significant increase in participants' final test scores compared to their initial test scores so that this training activity on recognizing hazards in the surrounding environment can be carried out again at another time. This training activity on recognizing hazards in the surrounding environment was deemed satisfactory for the training participants and quite important with a mean of 4.66 on a scale of 5.00, so it can be concluded that this training activity has satisfied the participants and has adequately answered the hopes and interests of the training participants.

Keywords: Safety training; surrounding hazards; productive.

1. INTRODUCTION

The problems faced by students and teachers cannot be separated from their involvement in various activities involving society and the academic environment. Each of these activities, whether carried out inside or outside the school environment, has potential hazards and risks that must be recognized thoroughly from the start. The involvement of teachers and students in training programs is a necessity, considering the impact that accidents or incidents may have which could endanger their safety and the safety of the surrounding community. Thus, prevention is the main key to overcoming these potential hazards. Awareness of the importance of occupational safety and health has become the main focus in various work environments, including educational environments such as high schools [1][2]. Safety campaigns and training in educational settings can provide a better



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understanding of the hazards around them, which in turn can increase awareness and reduce the risk of accidents [3].

Identifying potential hazards is a very important first step in risk management efforts, both in the company context and in preventing work accidents. Occupational safety and health is not only an individual responsibility, but also a collective responsibility to protect each individual from possible accidents that could cause harm to the company and individuals involved. Moreover, in daily activities, both at work and in social environments, the potential for danger and risk of accidents always exists. Therefore, it is important to provide training and education to the wider community so they can plan effective preventive measures.

Occupational safety and health programs, including training, have a crucial role in minimizing costs arising from work accidents. Accidents can happen unexpectedly and can affect anyone, anywhere, and at any time. The level of risk associated with these accidents can vary, from minor to fatal, depending on the potential hazards present in the work environment. These potential hazards can come from a variety of factors, such as physical, biological, chemical, ergonomic, and psychological, all of which must be recognized and taken seriously through appropriate training and awareness programs. Thus, prevention efforts are the main basis for ensuring safety and health for all individuals involved in community and academic activities. In previous studies, it was found that these efforts were successful in increasing students' understanding of work safety [4]. Likewise, other research highlights the importance of socializing safety culture from an early age at the elementary school level to build a strong awareness of work safety from an early age [5].

In addition, the implementation of safety practices has been proven to be effective in various contexts. Previous research has discussed basic safety socialization for elementary school students and found that this can increase their understanding of occupational safety and health [6]. Similarly, safety campaigns and training in academic environments, such as laboratories, have proven to be beneficial for lecturers and laboratory assistants [7].

However, there are still challenges in implementing safety practices as a whole, especially in the school environment [8]. Several studies have highlighted this problem, such as safety campaigns and training for high school teachers [9]. In this context, it is important to understand the factors that influence the effectiveness of safety programs in schools and identify strategies to increase awareness and implementation of safety practices.

By considering this background, this research aims to investigate hazards around the workplace, especially in high school educational environments, and their impact on productivity and well-being. This research will also explore strategies to increase understanding and awareness of safety among teacher participants and high school students, as well as the societies. From the literature analysis, it was found that awareness of hazards around the workplace, including in the high school education environment, is essential to increase individual productivity and well-being [10]. Safety campaigns and training have proven effective in increasing understanding of potential hazards and how to reduce the risk of accidents in the workplace.

One of the main findings is that education about safety needs to start early [11]. Socialization of safety culture from an early age can form safe thought patterns and behavior in the future work environment. Apart from that, the integration of safety material in the formal education curriculum is also pivotal [12].

However, the implementation of safety practices in the educational environment still faces several challenges [13]. Several studies, such as those conducted by previous researchers, highlight the obstacles in implementing safety programs for high school teachers [14]. Lack of resources, lack of indepth understanding of safety, and lack of support from authorities are several factors that can hinder the effectiveness of safety programs in schools.

Therefore, to increase the effectiveness of safety practices in the high school education environment, a holistic and sustainable approach is needed [15]. This includes increasing training and support for teachers and educational staff, integrating safety material in the education curriculum, as well as active participation from various parties, including the government, schools, and the general public. In a broader context, the implementation of occupational safety and health programs in the work environment has become a major concern, as shown in previous research [16]. The study shows that efforts to minimize work accidents through safety programs reflect the relevance and importance

of safety implementation strategies in various industrial contexts. In this community service, a campaign has been provided to increase awareness of the hazards around us. Participants involved in this socialization consisted of teachers, students, and private employees. At the end of the event, a quiz was held and awards were given to the winners of this event to increase participant enthusiasm. Participants were also given educational material modules so they could understand more deeply and apply the principles of occupational safety and health in their daily lives.

2. METHOD

The aim of community service is indispensable in the context of environmental awareness and individual safety. By introducing training on recognizing hazards in the environment, the hope is to provide the community with a better understanding of the risks that may occur around them and provide them with the tools and knowledge to control and overcome these hazards. Awareness of hazards in the surrounding environment is a crucial first step in reducing the potential for accidents and other negative impacts on individuals and society as a whole.

In dealing with the problems faced by teachers and students, training on recognizing potential hazards in the surrounding environment is a very appropriate solution. By introducing types of hazards such as physical, chemical, biological, ergonomic, and psychological hazards, it is hoped that participants will have a more comprehensive understanding and be able to work more productively and safely. The output of this training is expected to be an increase in understanding and knowledge about hazards in the surrounding environment, which will be measured through structured questions before and after the training. Figure 1 shows the activity flowchart.



Figure 1. Flowchart of activity

This measurement will be carried out by asking a series of questions that test participants' understanding of the types of hazards and their ability to identify hazards before and after training. The results of the number of correct answers will be analyzed to see how effective this training is in increasing participants' understanding and awareness. This training is planned to be carried out online for two days, utilizing technology platforms to reach a wider range of participants.

This training hopes to increase the participant's knowledge and awareness about the importance of recognizing potential hazards in the environment around them. Thus, they will be better able to face and manage risks that may occur. As a result of this community service activity, it is hoped that it can provide concrete solutions to problems faced by teachers and students related to potential hazards in their work environment.

The methods used in delivering this training material will involve various interactive and effective approaches. The training will be conducted online for two days, providing a question-and-answer session that allows participants to interact directly with the organizers. The training material will

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include the understanding and definition of hazards and risks, the types of hazards that may occur, and appropriate risk control methods according to the existing potential hazards.

Apart from that, during the training event, participants will also be allowed to ask questions directly about various matters related to the material presented. The organizers hope that by providing opportunities for direct discussions, participants will better understand and be able to apply the knowledge gained from this training in the environment around them. This activity was carried out using the lecture method because based on previous research, health education through the lecture method can increase a person's knowledge of previously unknown material [17]. Therefore, in this research, the occupational safety and health campaign was carried out to test whether it could increase participants' knowledge about occupational safety and health. There are many potential hazards around us. Controls related to occupational safety and health must be handled seriously by company management [18]. Therefore, occupational health and safety issues must be fully addressed, one of the methods used in this research is through hazard awareness education.

The training will last for two days, with participants invited via video conference platforms such as Zoom. At the end of the training, participants will be asked to fill out a questionnaire that will assess various aspects related to the organizer's activities, the effectiveness of the event, and participant satisfaction with the training. Apart from that, participants will also be allowed to provide constructive criticism and suggestions so that organizers can improve the quality of their services in the future. Thus, it is hoped that this activity can make a significant contribution to increasing awareness and safety in society at large.

3. RESULTS AND DISCUSSION

The results of the training on recognizing hazards in the surrounding environment showed a significant increase in participants' understanding of the hazards and risks in their environment. This training lasted for 3 hours, during which participants were guided by the main speaker who explained the material while being monitored and guided by other committee teams. Before the event begins, participants are given a pre-test to measure their initial level of understanding of the hazards in the surrounding environment, as well as to assess their expectations and interest in this training. At the end of the event, participants were tested again with a final test to evaluate their understanding after following the training. Apart from that, the final test also includes an assessment of participants' satisfaction with the course of the training and provides an opportunity for them to provide criticism and suggestions to the training committee. Figure 2 shows the respondent profile.

The total 40 participants, 32 participants answered the pre-test and post-test questions. The data obtained from this activity relates to participants' answers to the initial test and final test. The two main variables observed were the participants' initial test scores and final test scores. The difference between these two variables was then tested statistically to see whether there was a significant difference in participants' understanding before and after the training. If there is a significant difference, this shows the effectiveness of the training in increasing participants' understanding.



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Data analysis showed that there was a significant increase in participants' final test scores compared to their initial test scores. This indicates that training on recognizing hazards in the surrounding environment has been successful in increasing participants' understanding. Therefore, it can be concluded that this training design is effective and can be recommended for implementation again in the future. Based on the normality test, the significance value was <0.0001, so the data was not normal. Therefore, the statistical tests taken are non-parametric statistics. Table 1 shows descriptive statistics. The total number of respondents' correct answers is shown in Table 2.

Table 1. Descriptive Statistics					
Variable	Mean	St. Deviation			
Pre-Test Score	6.1563	0.8838			
Post-Test Score	7.3125	1.0606			
Table 2. Total participants' correct answers					
Total Correct Answers	Frequency				
	Pre-test	Post-test			
5	5	0			
6	21	6			
7	3	16			
8	2	6			
8 9	2 1	6 2			

Furthermore, the results of the participant understanding questionnaire regarding the training also support these findings. Before the material was discussed by the keynote speakers, the average number of correct answers from participants was 6.1563 out of 10 questions. After discussing the material, the average number of correct answers increased to 7.3125 from 10 questions. Table 3 shows the significance test of the pre-test and post-test score results.

Table 3. Wilcoxon signed the rank test			
Hypothesis	Gap	Sig.	Decision
H1 : There was a significant difference between the participants' initial and final test scores	1.1562	<0.0001	Reject H ₀

Statistical analysis shows that there is a significant increase in participants' understanding after attending this training, as supported by the results of the Wilcoxon Signed Rank Test which shows a significance value of 0.0001.

These findings confirm that training on recognizing hazards in the surrounding environment succeeded in significantly increasing participants' understanding. This increase indicates that participants have succeeded in internalizing the training material well and can recognize potential hazards and how to manage them in the environment around them. Therefore, this kind of training activity has important value in increasing people's awareness and preparedness for the hazards around them.

Apart from that, the results of the questionnaire also showed that this training received a positive response from the participants, who expressed their satisfaction with the course of the event. This shows that the training was not only effective in increasing participants' understanding but also successful in providing a satisfying training experience for participants. Thus, recommendations for carrying out similar activities in the future become stronger, with certain adjustments based on criticism and suggestions provided by participants.

This hazard recognition training activity was also felt to be quite satisfying for the training participants with an average of 4.66 out of 5 on a scale, so it can be concluded that this training activity has satisfied the training participants.

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Overall, these results and discussion confirm that training on recognizing hazards in the surrounding environment has made a significant contribution to increasing participants' understanding and awareness of the hazards around them. With these findings, it is hoped that it can encourage further efforts to provide effective and relevant training to increase community awareness and preparedness for risks in the surrounding environment.

4. CONCLUSION

Training activities to recognize hazards in the surrounding environment have been effective in increasing the level of understanding of participants. This statement is proven by the significant increase in participants' final test scores compared to their initial test scores so that this hazard recognition training activity can be carried out again at another time. This hazard recognition training activity was also felt to be quite satisfactory for the training participants with an average of 4.66, so it can be concluded that this training activity has satisfied the training participants. Thus, after this hazard recognition training activity, trainees can recognize potential hazards and risks in the surrounding environment, so that trainees can apply hazard control and hazard mitigation in everyday life. The suggestion from this community service is to carry out these training activities more often and deliver material that is easy to understand by all levels of society.

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