

## **OCCUPATIONAL SAFETY, HEALTH AND ENVIRONMENT (OSHE) INSCHOOL FRAMEWORK**

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### **ABSTRACT**

Occupational safety, health and environment (OSHE) in school framework is aim to design a safe school concept in order to minimize the incident cases that happened in school area. This framework is very useful if it is implemented in every school. In turn, it can also improve safety and health features in the future. With the existence of this framework of occupational safety, health and environment (OSHE), will give an idea in safety emphasizing safety and health in schools, especially in safety management and also in the physical environment factors. Based on survey carried out by 50 respondents that are from the residents of school, one of the major problems regarding the occupational safety and health in school is because of the lack of safety management and physical environment in school. In order to get the confirmation about this, the survey was conducted to 50 targeted respondents. The result from the survey shown that they agreed that the aspect of safety and health is very vital to adapt in school. In advance they also agreed that the idea of framework on occupational safety, health and environment (OSHE) in order to design a safe school concept is very interesting and might be very useful in the future to minimize the incident cases in school. This paper also will be illustrated through poster and video presentation for more further understanding.

**Keywords:** Safe school; safety management; physical environment; occupational safety, health and environment (OSHE)

### **1. INTRODUCTION**

A safe school is one of the settings or scenarios in which students can learn in a calm and secure environment. School is one of the venues where all students, teachers, and staff members gather to learn and teach. To build a safe school concept, it must first comprehend the concept of a safe school. When there are some triggers in terms of safety in the school area, whether outside or within, issues of school safety arise. A safe school is closely linked to laws and regulations such as the Environmental Quality Act of 1974, the Occupational Safety and Health Act of 1994, and procedures such as OHSAS 18001 or ISO 45001.

A safe school is one where students can learn and teachers can teach in a secure setting. According to Neil, a safe school is a tranquil environment where kids and teachers can learn and teach without fear of physical or social damage. Griffin (2002) defines a safe school as one that prioritises friendliness, a caring attitude, and clear behavioural expectations, as well as the school being consistently fair to the students.

## 2. PROBLEM STATEMENT

School-related accidents and injuries are no longer uncommon in any country, particularly in Malaysia. A school is a structure where students are taught and learn. In general, risky machines are not used in the teaching and learning process in schools. The physical condition and architecture of the school also help to reduce accidents. However, there are still a lot of incidents that happen at school. In addition, deadly accident incidents are increasingly being covered in the media. So apart of that, the survey was conducted to find out the real cause of accidents can happen in schools. The target number of respondents are 50 respondents from residents in school such as students, teachers, school administrative and school staff. According to the results of the survey (table 1.1), the main cause of accidents is a lack of safety management and a lack of focus on physical environment occupational safety, health and environment in the school setting.

**Table 1.1: A barriers to design a safe school concept**

Items	Strongly Agree (5)	Agree (4)	Neutral (3)	Disagree (2)	Strongly Disagree (1)	Mean Score
1 Have you ever seen, heard of or participated in any program in shaping a school towards a safe school?	40	4	6	0	0	4.68
2 Has there ever been an accident at your school involving students?	48	2	0	0	0	4.96
3 Do you agree with the existence of excellent safety features in schools can help reduce cases of accidents in schools among school children?	45	3	2	0	0	4.86
4 Do you agree that school furniture such as desk chairs should be replaced at an immediate rate when it is expired or damaged?	44	4	2	0	0	4.84

5	Does the existence of safety management in schools help improve the characteristics and level of safety in schools?	42	4	4	0	0	4.76
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### 3. LITERATURE REVIEW

#### 3.1 Elements of safety management

##### 3.1.1 Policy and commitment

As part of the Safety Statement required by section 20 of the 2005 Act, the organisation should develop an occupational safety and health policy programme (Health and Safety Authority, 2006). Effective safety and health policies should provide the organisation with a clear path to follow. A policy is essential in the classroom since it serves as a guideline for everyone, including students, teachers, staff, and guests. To put it another way, the school administration must concentrate on the policies that must be adhered to. Follow all of the authority's requirements, such as those for Urban Wellbeing, Housing, and Local Government. They will determine whether the location is appropriate or safe for students. It could also be due to the school's geographic location. According to the Federation of National Associations of al-Quran Tahfiz Institutions, around half of the country's 1,200 private Islamic schools are not registered. It means that the majority of unregistered schools do not follow the safety management scope that should be implemented in their school, but they do not believe it is necessary. That school was involved in a fire disaster in 2017, in which 25 people were killed when grills trapped them inside due to a lack of safety policies (The Straits Times, 2017).

##### 3.1.2 Planning

The organisation should devise a strategy for implementing the Safety Statement of safety and health policy; however, in order for the policy to be executed, an effective management structure and processes must be in place (Health and Safety Authority, 2006). Prioritize long-term planning for the school's safety and health. All managers and staff should have safety and health objectives and targets. For example, the school must be prepared to cope with any threat to the safety of all students. To protect and reduce the risk of injury to students, the school administration must always have a safety plan in place. This is due to the fact that disasters can occur at any time. Based on its disaster response skills both locally and internationally, MERCY Malaysia has created a School Preparedness Programme (SPP) to share its expertise and build resilience for students and teachers in the face of natural catastrophes (Mercy Malaysia, 2021). The initiative aims to strengthen school and student capacity to respond to disasters while also promoting disaster preparedness among students and instructors. In 2012, 15 schools successfully implemented the School Performance Profile, or SPP, in three phases. In the classrooms of the SPP workshop participants, disaster risk reduction (DRR) activities were implemented. MERCY Malaysia also provided volunteer trainers with a refresher course on SPP processes. Despite its proximity to the Pacific Ring of Fire, Malaysia is fortunate to be free of natural disasters such as earthquakes and volcanoes, thanks to the protection provided by its neighbours (Mercy Malaysia, 2021). Despite this, monsoon flooding and flash floods are common in many parts of Malaysia.

### **3.1.3 Implementation and operation**

Everyone in the school should be aware of what needs to be done to improve the safety system and reduce risk in terms of implementation and operation. In the event of an emergency, they must have a plan in place. According to (Amherst College, 2021), emergency evacuation training requirements, emergency exit requirements, fire-reporting, fire extinguishers, fire prevention plan, rescue and first-aid procedures, first-aid kits, and knowing when to call for help are all important aspects of the Emergency Action Plan. As a result, because fire extinguishers have an expiration date, all schools must be concerned about them on a frequent basis. In the event of a fire, for example, anyone in the school can use the fire extinguisher right away while waiting for the fire department. Aside from that, all children must be taught the essentials of safety.

An effective safety and health management system should be created to implement the safety and health policy in a planned and methodical manner. The goal should be to keep risks to a minimum. To identify priorities and create objectives for reducing hazards and lowering risks, risk assessment methodologies should be employed, and risks should be minimised as much as feasible through the selection and design of facilities, equipment, and processes (Health and Safety Authority, 2006). If dangers cannot be eliminated, they should be reduced to the greatest extent possible by using physical controls and safe work processes, or, as a last resort, providing personal protection equipment.

Performance benchmarks should be set and utilised to assess development. Specific steps must be developed in order to create a positive safety and health culture. For example, the school may keep track of how many incident instances occurred in the school and figure out where the problems came from. Everyone in the organisation should be aware of the organization's vision, goals, and values. The headmaster's visible and active leadership promotes a positive safety and health culture.

### **3.1.4 Measuring performance**

The organization's safety and health performance should be measured, monitored, and evaluated, with the findings compared to agreed-upon benchmarks to see when and where improvements are required (Health and Safety Authority, 2006). The efficiency of the health and safety management system is revealed through active self-monitoring. In self-monitoring, both hardware and software (premises, plants, and chemicals) are taken into account (people, procedures and systems, including individual behavior and performance). If controls fail, reactive monitoring should investigate the accidents, diseases, or occurrences that may have resulted in harm or loss to determine why they failed.

The goal of active and reactive monitoring is to discover the immediate causes of poor performance, as well as any underlying causes and consequences for the safety and health management system's design and operation (Health and Safety Authority, 2006). Longer-term goals should also be tracked. Active monitoring and reactive monitoring are the two types of performance measurement systems (Occupational Safety and Health, 2008). Before something goes wrong, active monitoring offers information on safety performance. It comprises a safety inspection of the school grounds to ensure that no potentially hazardous conditions exist.

Any potentially dangerous events should be reported during the examination. To improve the safety and health conditions, immediate remedial action should be implemented. An analysis of the inspection findings may aid in the identification of issues and the development of a plan to improve safety standards. The review of safety and health issues such as an accident/incident, a health concern, or a complaint about a work condition is referred to as reactive monitoring. It's a fantastic technique to gather information for future changes. The investigation should include the identification of the reasons as well as recommendations for preventing recurrence.

### **3.1.5 Auditing and reviewing performance**

The organization's safety and health management system should be reviewed and upgraded on a regular basis to improve overall safety and health performance. Data from monitoring and independent audits of the entire safety and health management system should be used to undertake a full analysis of performance. These lay the groundwork for the organization's adherence to the 2005 Act and other legal obligations. A significant commitment to continuous improvement, including the creation of risk control policies, methods, and techniques, should be made.

The school safety management system must be reviewed on a regular basis to ensure that it remains effective and meets the overall security and health objectives. This is where the school management's tasks are best carried out, as they can establish rules, make judgments on the adequacy of health and safety, and determine the nature and timing of the changes that are required (Occupational Safety and Health, 2008).

The management system is one of the most important sources of information for assessment. We look at things like standard compliance, accidents, illness, and incident data, as well as analysis of immediate and underlying causes, trends, and common characteristics, progress with corrective actions identified through active and reactive surveillance, and a comparison of safety and health performance (Occupational Safety and Health, 2008).

## **3.2 Physical Environment**

### **3.2.1 Physical structures, infrastructure, furniture**

School designers have long battled with how to effectively design a school (or a school system with several campuses) that supports the educational process. Although not impossible, it requires a thorough grasp of the current circumstances, all stakeholders' expectations, and the best strategy for meeting those expectations. In terms of facilities, it's always important to have some common quantitative denominators or criteria to enable planners discover any anomalies in the existing school or system, and designers propose solutions that meet both immediate and long-term goals. A suitable amount of classroom furniture should be given, according to UNESCO (2021), with a mechanism in place to replace broken pieces on a regular basis. As a result, movable items are desirable since they allow for more flexible learning methods, and furniture should be sized appropriately for the children's age (UNESCO, 2021).

### **3.2.2 The use and presence of chemicals and biological agents**

In the commercial world, around 75,000 chemical compounds are now in use. Many of these chemical compounds are dangerous or detrimental to humans and other living beings. Toxic chemicals have been related to cancer, neurological disorders, reproductive problems, organ damage, and asthma, among other serious health problems (EPA, 2006). Children and teenagers are especially vulnerable to toxic compounds that remain in the environment and bioaccumulate through the food chain. Chemicals, among other things, can irritate the skin, eyes, nose, and throat. Some chemicals are hazardous due of their ability to produce flames or explosions. There are various hazardous substances in school buildings. Chemical manufacturers offer Material Safety Data Sheets (MSDS) that define the physical properties, health impacts, and other characteristics of chemicals, as well as handling, storage, and disposal procedures. Chemical producers should include MSDSs with each shipment of chemicals they send to your school. Maintaining a healthy environment for students and the general public requires careful usage and management of these chemicals, as well as the commodities that contain them.

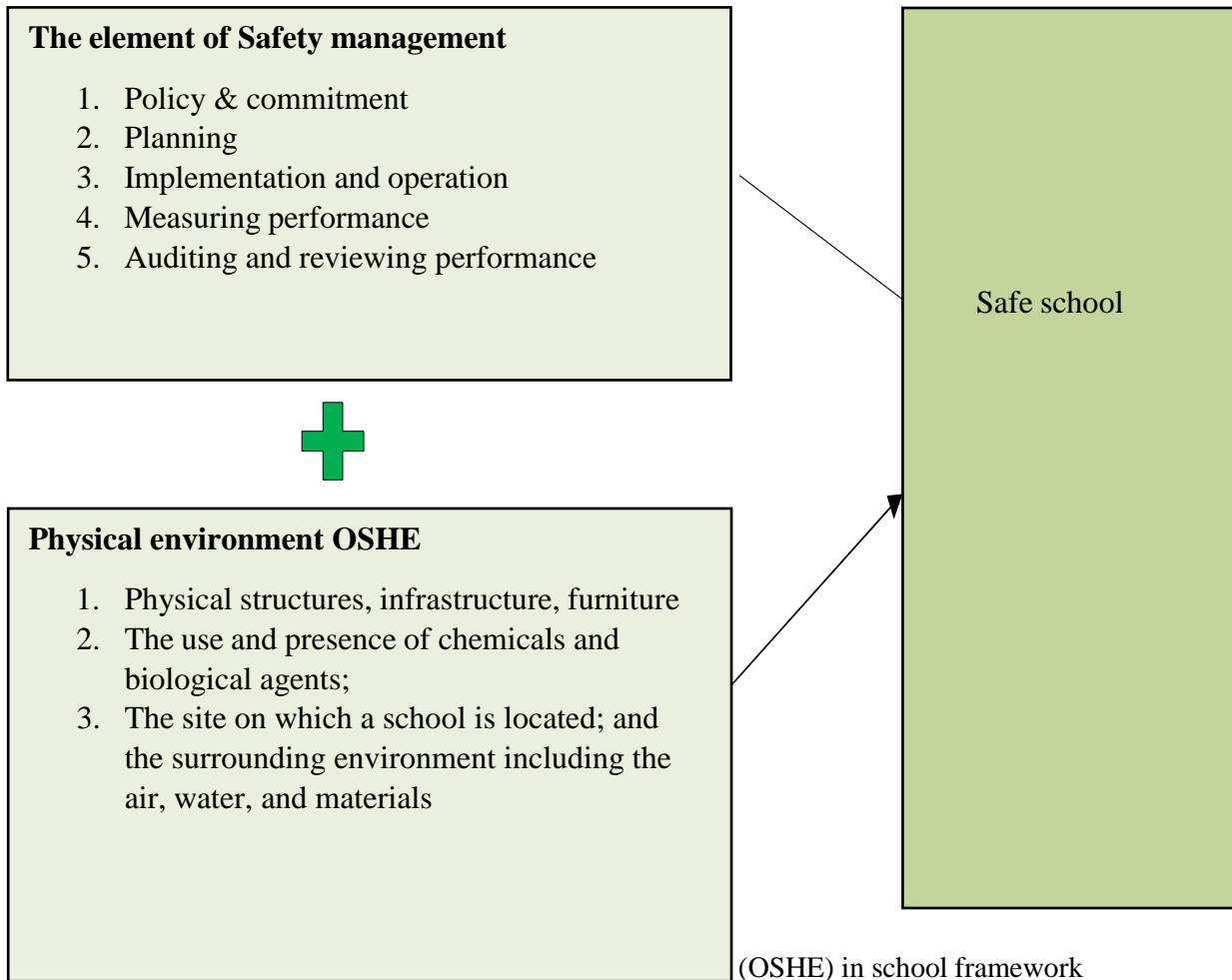
**3.2.3 The site on which school is located and the surrounding environment.**

It is critical to concentrate on the location of the institution. Aside from that, the students' environment in that school, such as the air, whether indoor or outdoor, is safe or not. Schools should be no more than 3 kilometres from students' homes to maximise access and attendance, and closer for younger children, where places should be chosen with safety and health in mind (UNESCO, 2021). An enclosure or other appropriate boundary can help keep children safe and on school premises.

One of the reasons why the school's location should be prioritised is that it would affect students' ability to learn in a comfortable environment free of pollution such as noise pollution. Learning can be affected by noise distraction, according to UNESCO (2021), thus railways, high-traffic areas, and noisy companies should not be located near schools.

**INDEPENDENT VARIABLE**

**DEPENDENT VARIABLES**



**4. METHODOLOGY**

Survey questionnaires that have a reliability of more than 0.7, according to Sabitha Marican(2006), can be used as a measurement item in a study. Cronbach's Alpha from the Statistical

Package for the Social Sciences (SPSS) program was used to conduct the analysis. A survey of the residents of the school was conducted.

This survey was conducted to get a direct picture of the book after three months of use. The questionnaire used a Likert scale format of 1 to 5 (1 = strongly disagree, 5 = strongly agree). The following is a list of items (Table 1.2):

Item Number	Questions
1.	The framework is very useful
2.	The framework is easy to understand
3.	The concept of safe school in this framework is balance because it covers two aspect which are safety management and physical environment
4.	The idea of a safe school concept is very interesting
5.	The framework of safe school is very flexible to adapt in school
6.	The design to create a safe school idea can reduce an accident cases in school area
7.	I am satisfied with the idea of framework of safe school

## 5. RESULT AND DISCUSSION

In general, the residents in school agreed that the framework of safe school is very useful with the mean of 4.54 (Table 1.3). However, there are also 4 respondents who have neutral feelings on the idea of safe school that be illustrated in the framework. Majority of the respondents also strongly agree that the framework is easy to understand with the mean score of 4.92. Moreover, the respondents also stated that the concept of safe school in this framework is balance because it covers two aspects which are safety management and physical environment with the mean score 4.38. Respondents also stated that the idea of safe school concept is very interesting with a mean score of 4.64. However, there are 4 respondents who have neutral feeling on this. The design to create a safe school idea can reduce an accident cases in school area with a mean score of 4.92. For the highest mean score is 4.96 where the respondents give a positive respond on the framework of safe school is very flexible to adapt in school. Other than that, with the same score which is 4.96, the respondents also stated that they are satisfied with the idea of framework of safe school.

**Table 1.3 Findings of mean score**

Items	Strongly Agree (5)	Agree (4)	Neutral (3)	Disagree (2)	Strongly disagree (1)	Mean Score
1. The framework is very useful.	43	3	4	0	0	4.54
2. The framework is easy to understand.	47	2	1	0	0	4.92
3. The concept of safe school in this	43	7	0	0	0	4.38

	framework is balance because it covers two aspect which are safety management and physical environment.						
4.	The idea of safe school concept is very interesting	36	10	4	0	0	4.64
5.	The framework of safe school is very flexible to adapt in school	48	2	0	0	0	4.96
6.	The design to create a safe school idea can reduce an accidentcases in school area.	46	4	0	0	0	4.92
7.	I am satisfied with the idea of framework of safe school.	48	2	0	0	0	4.96

## **6. CONTRIBUTION AND USEFULNESS/COMMERCALISATION**

The contribution of this framework of safe school idea can be used as one of the safety and health guidelines in every school whether in secondary school or primary school. This framework is very helpful in making the concept of a safe school more relevant and efficient. Safe schools are an interesting idea to reduce cases of injuries, accidents involving the safety,health of students, teachers or anyone who is in school. With the existence of this safe schoolframework, it will help the school in further improving the safety and health features in the school so that unwanted things will not happen.

Thus, this framework can also be adopted and trusted because it refers to the guidelines provided by NIOSH. This safe school framework is inspired by the framework of safety and health in the workplace area such as in the factory. Therefore, the safety and health framework can also be implemented in schools as one of the efforts to minimize accidents in schools.

Furthermore, the safe school framework can also provide more thoughtful ideas and seek cooperation with various parties in realizing this framework into reality in the future. For example, cooperation with DOSH which is the Department of Occupational Safety and Health,DOE which is the Department of Environment, MOH which is the Ministry of Health Malaysia,or with MOE which is the Ministry of Education. With the cooperation of all parties will help theconcept of safe schools will be implemented and the main purpose in reducing safety and health problems in schools among school children can be reduced.



## 7. NOVELTY

Framework of safe school only uses creative graphic materials such as the production of creative posters and also video presentation to help readers better understand the concept of safe school with a simple and flexible method. Guided by some guidelines from various official websites such as DOE, DOSH, MOH, MOE and others can help in producing a more accurate framework. In advance, it is very friendly because we only use QR code to link to the product which is to the framework where we can limit the use of paper too.

# OCCUPATIONAL SAFETY, HEALTH AND ENVIRONMENT (OSHE) IN SCHOOL FRAMEWORK

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## INTRODUCTION

- A safe school is one of the settings or scenarios in which students can learn in a calm and secure environment. School is one of the venues where all students, teachers, and staff members gather to learn and teach. To build a safe school concept, you must first comprehend the concept of a safe school. When there are some triggers in terms of safety in the school area, whether outside or within, issues of school safety arise. A safe school is closely linked to laws and regulations such as the Environmental Quality Act of 1974, the Occupational Safety and Health Act of 1994, and procedures such as OHSAS 18001 or ISO 45001.

## PROBLEM STATEMENT

- There are a lot of incidents that happen at school. In addition, deadly accident incidents are increasingly being covered in the media.

## METHODOLOGY

- A survey questionnaire was distributed to 50 respondents among the residents in school.
- The data was analysed using SPSS analysis.

## FINDINGS

- The respondents also stated that they are satisfied with the idea of framework of safe school.
- The respondents give a positive respond on the framework of safe school is very flexible to adapt in school.

## NOVELTY

- Use graphic materials such as poster.
- The idea of safe school framework also be illustrated through Video Presentation.
- Accurate information that guided by DOSH, DOE, MOH, MOE.
- Environmental friendly because only use QR code to link to the framework graft.

## CONTRIBUTION & USEFULNESS

- Guidelines in every school whether in secondary school or primary school.
- Help the school in further improving the safety and health features in the school so that unwanted things will not happen. Efforts to minimize accidents in schools.

### CONCEPTUAL FRAMEWORK

The Framework of Safe School (OSHE) in School Framework

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graph LR; A[Framework of Safe School (OSHE) in School Framework] --> B[Framework of Safe School];
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## **8. CONCLUSION**

In conclusion, the safe school framework is a framework that should be implemented to further improve the specific features in safety, health and environment for the residents in school such as students and teachers. Therefore, it can also help in achieving the goal in the 4th SDGs, which is quality education. This is because, when a safe school can be established, then the school will be able to focus on improving the achievement of students, teachers and school. So the achievement that received by the school will be better quality and have a good performance. Thus, the 11th SDGs also mention sustainable cities and communities are also related to the idea of a safe school framework. This is because, there are various types of schools such as urban schools and rural schools. Therefore, creating safe schools such as in urban areas will realize some of the government's targets in the 11th SDGs. With the existence of the idea of a safe school framework will be able to reduce the risk of accidents occurring in schools whether seriously or not.

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