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Fostering Emergency Preparedness Culture: Infrastructure, Training, and Promotion at SD Ummu Aiman Malang

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Abstract: *Safety education for elementary school students is essential for preparing them for emergencies and preventing casualties. However, SD Ummu Aiman, an elementary school in Malang with 653 students, was inadequately equipped in terms of both infrastructure and knowledge to respond effectively in emergencies. This community service initiative aimed to enhance the school's emergency preparedness and evacuation system by providing evacuation infrastructure, conducting awareness training, simulating emergency drills, and promoting a safety culture through safety induction aimed at fostering behaviour-based safety. The awareness training resulted in an average increase in knowledge of 15.1 points among 53 teachers (p-value < 0.001), and evacuations were completed in under three minutes. It is anticipated that the knowledge and skills transferred to the teachers will be conveyed to the students, who are crucial for developing readiness for emergencies and fostering a safety-minded society in the future.*

Introduction

Malang has experienced a fourfold increase in earthquake frequency in the last four years, with the largest being 5.8 on the Richter scale [1]. Earthquakes, as well as natural and anthropogenic disasters such as fires, floods, and weather-related events, have

[1] BPS Kab. Malang, *Kabupaten Malang Dalam Angka 2023* (Kabupaten Malang: Basan Pusat Statistik, 2023).

frequently been observed in this area. In general, children in primary school and the elderly are the majority of the population who are more likely to be affected by disasters and become victims [2]. Even though children do not become victims, the stressful experience will likely be prolonged into adulthood, making them more susceptible to the impact of disasters if they have not been prepared from the beginning of their lives [3]. This is particularly important as a study observed that emergency events are so common that one occurs in the first three years of a random student entering the school-age group [4].

School is known to pose a greater risk to children compared to home. This is because many full-sized combustible and flammable materials are present, in addition to extensive use and exposure to the materials [5]. Hence, a health and safety system is essential for educational institutions, particularly those focusing on children and primary education. The lack of emergency preparedness and evacuation systems, such as the Emergency Response Team (ERT), can result in high material defects and loss of life [6]. Therefore, the school must integrate its evacuation plan into daily activities by engaging children to enhance preparedness in the event of a disaster [7].

Indeed, the Indonesian government, through the Ministry of Education, has implemented an emergency response and preparedness system to reduce casualties due to natural disasters [8]. Nonetheless, some studies in several schools in Indonesia have shown an unsatisfactory understanding of health and safety, as well as emergency response. A school in Banyuraden was observed to have a moderate preparedness index for evacuation, with the highest score for earthquake conception and the lowest for policy and guidelines to do so [9]. Another study in a school in Semarang suggested that top management has the lowest appropriateness of health and safety parameters at 30%,

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[2] Zurriyatun Thoyibah et al., “Gambaran Dampak Kecemasan Dan Gejala Psikologis Pada Anak Korban Bencana Gempa Bumi Di Lombok,” *Holistic Nursing and Health Science* 2, no. 1 (June 2019): 31–38, https://doi.org/10.14710/hnhs.2.1.2019.31-38.

[3] A.k. Bedriye, “Determination and Evaluation of Effects of Earthquake on School Age Children’s (6-12 Years Old) Behaviours,” *Procedia - Social and Behavioral Sciences* 152 (October 2014): 845–51, https://doi.org/10.1016/j.sbspro.2014.09.332.

[4] Karlene Tipler et al., “Are You Ready? Emergency Preparedness in New Zealand Schools,” *International Journal of Disaster Risk Reduction* 25 (October 2017): 324–33, https://doi.org/10.1016/j.ijdrr.2017.09.035.

[5] Mohammad A. Hassanain et al., “A Framework for Fire Safety Management in School Facilities,” *International Journal of Built Environment and Sustainability* 9, no. 2 (May 2022): 1–9, https://doi.org/10.11113/ijbes.v9.n2.901.

[6] Khaerul Anam, Muhammad Riyan Hidayatullah, and Lilik Evitamala, “Disaster Mitigation Trainig in Safe Education,” *Abdinesia: Jurnal Pengabdian kepada Masyarakat* 2, no. 1 (2022): 15–18.

[7] Andrea Vásquez et al., “Children’s Views on Evacuation Drills and School Preparedness: Mapping Experiences and Unfolding Perspectives,” *International Journal of Disaster Risk Reduction* 28 (June 2018): 165–75, https://doi.org/10.1016/j.ijdrr.2018.03.001.

[8] Anggita Ratna Dewi, “Penerapan Kebijakan Sekolah Siaga Bencana Tingkat Sekolah Dasar Di Yogyakarta,” *HIGEIA (Journal of Public Health Research and Development)* 4, no. Special 1 (2020): 286–95.

[9] Restu Faizah et al., “Pengukuran Dan Pelatihan Kesiapsiagaan Komunitas Sekolah Dasar Muhammadiyah Banyuraden Terhadap Bencana Gempa Bumi,” *Journal of Dedicators Community* 5, no. 1 (January 2021): 8–18, https://doi.org/10.34001/jdc.v5i1.1131.

followed by teachers at 54.5% and students at 76.47%, respectively [10]. According to a study on health and safety topics, it was observed that the least understanding falls on earthquakes, floods, and electrical safety, at rates of 48%, 50%, and 57.2%, respectively [11].

For these reasons, health and safety education is essential for children during their early school years. Exposure to health and safety, as well as emergency preparedness, in the school has significantly strengthened the safety culture in adulthood [12]. People can develop their habits and knowledge at each stage of their lives. Some important topics to be trained in are health and safety concepts, hazards at school, evacuation procedures, signage, and continuous improvement [13]. It is essential to conduct drills and schedule awareness training to ensure that the knowledge is retained. This can increase the school community's familiarity with the appropriate procedures [14].

As a model for health and safety implementation, this community service was performed at SD Ummu Aiman. SD Ummu Aiman is a primary school located in Malang Regency, occupying a 3,479 m² area. This educational institution employs 70 teaching staff and nurtures 653 students from Grades I to VI. Despite the size of its community, unfortunately, this school was not sufficiently equipped with an emergency preparedness and evacuation system. A previous visit to the school revealed that knowledge of disaster management is limited, and behaviour-based health and safety has yet to be implemented thoroughly.

Teachers also reported having no formal knowledge or training in occupational safety and health, which made them feel responsible yet uncertain when attempting to manage safety issues by themselves. Previous inspections by the Malang Regency Disaster Management Agency (BPBD) identified several deficiencies in evacuation routes and safety signage. However, the school lacked the technical capacity to address these gaps. To prevent potential injuries and accidents, the school urgently requires guidance and assistance from professionals with the appropriate health and safety expertise. Baseline observations further indicated the absence of evacuation route maps, designated assembly points, and emergency signage within the school buildings. No

[10] Evi Widowati, "Gambaran Penerapan Safety Education (Pendidikan Keselamatan) Di Sekolah Dasar," *Jurnal of Health Education* 2, no. 1 (2017): 66–72.

[11] Rahman, Muhammad Kidri Alwi, and Suharni, "Pengaruh Penerapan Modul K3 Sebagai Bahan Ajar Terhadap Pengetahuan Anak Sekolah Dasar Tentang Kesehatan Dan Keselamatan Kerja," *Journal of Muslim Community Health (JMCH)* 3, no. 2 (2022): 152–66.

[12] Zeynep F. Olcay, Sertaç Temur, and Ahmet E. Sakalli, "A Research on the Knowledge Level and Safety Culture of Students Taking Occupational Health and Safety Course," *Cypriot Journal of Educational Sciences* 16, no. 1 (February 2021): 187–200, https://doi.org/10.18844/cjes.v16i1.5519.

[13] Nur Asniati Djaali et al., "Penerapan Kesehatan Dan Keselamatan Kerja (K3) Melalui Sosialisasi Potensi Bahaya Di Sekolah," *Jurnal Pemberdayaan Komunitas MH Thamrin* 2, no. 1 (March 2020): 34–43, https://doi.org/10.37012/jpkmht.v2i1.290.

[14] Jaclyn Schildkraut and Amanda B. Nickerson, "Ready to Respond: Effects of Lockdown Drills and Training on School Emergency Preparedness," *Victims & Offenders* 15, no. 5 (July 2020): 619–38, https://doi.org/10.1080/15564886.2020.1749199.

teacher had previously participated in an evacuation drill, and interviews revealed uncertainty in responding to fire or earthquake events. In addition, the baseline pre-test score of 52% among teachers confirmed low preparedness levels, particularly in fire response and hazard recognition. These gaps demonstrate that the current safety culture and infrastructure are inadequate, justifying the need for a structured emergency preparedness programme.

Therefore, since Malang Regency is considered a high-risk area for natural disasters and fires, it is notable that this school conducts community service. This community service aims to apply the knowledge gained in the university and to promote healthy and safe behaviour among students and teachers. This is especially important since Malang Regency is one of the most densely populated areas in East Java, and this school can serve as an example of good practices for others.

Method

Observation and Hazard Identification

To begin, a site survey was conducted. Together with the headmistress and teachers, observations and discussions were performed to identify the lack of an emergency response system and hazards related to evacuation. This included the physical infrastructure, i.e., evacuation routes, signage, maps, and alarms, as well as the basic knowledge of emergencies possessed by some teachers and students. This step also served as a baseline assessment to understand the initial level of preparedness before any intervention was given. The methodological approach used in this programme followed an implementation research design with a single-group pre–post evaluation, combining descriptive observation and quantitative analysis. All observations were documented using a structured checklist that referred to national preparedness guidelines to ensure consistency in data collection. The overall result of the hazard identification was then plotted in a plan, as shown in Figure 1.

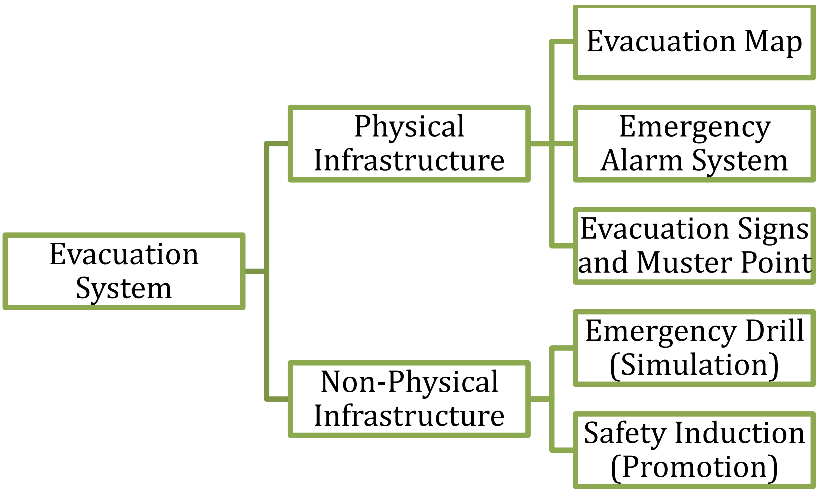

Figure 1. Implementation Plan of Evacuation System at SD Ummu Aiman

Evacuation System Installation

The observation provided data on what and how physical infrastructure needs to be installed at the school. For the evacuation map, three spots were identified as potential placements, considering the distance between the nearest egress and the planned muster point. Maps were drawn in A2 size, showing the evacuation route, fire extinguisher, first aid box, and muster point. A clear note for the "You are Here" sign was placed on the map according to its respective placement. On the other hand, muster point signage was erected on the side of the ceremonial field to ensure that all students could be evacuated in the event of an emergency. Regarding the alarm, a panic button has been installed in the teacher's office, which simultaneously connects to two alarms. The sound intensity of the sirens was set at 300 m to ensure total coverage of the area. All installations were verified again through walkthrough inspections to ensure they functioned as designed before conducting the training and drill.

Socialisation in Emergency Preparedness

After the installation, awareness training and evacuation drills were conducted with all teachers, facilitated by an industrial expert in occupational health and safety. The training material includes how to deal with emergencies, evacuation procedures, the appointment of an ERT, drills during earthquakes, and basic firefighting practices. A quantitative pre and post-test was used to measure changes in teachers' knowledge and behaviour related to emergency response. A pre-test and post-test were conducted to obtain a quantitative result of the training. The results were then analysed using a paired t-test and a chi-squared test at $\alpha = 0.05$. All statistical analyses were performed using IBM SPSS Statistics to determine whether the intervention resulted in a statistically significant improvement. The drill involved physical evacuation infrastructure that had been installed in advance. At the end of the training, teachers are expected to transfer the knowledge to all students and conduct a scheduled drill at least twice a year.

Safety and Health Promotion

Since the school community changes annually, a safety induction video was created to promote health and safety. This video can be played to new students and their parents to introduce the safety culture at SD Ummu Aiman. In addition, the video also serves as a means to help the school community retain its knowledge, as it is played daily in the school's strategic area. The content of the safety induction includes a brief overview of the school area, evacuation procedures, muster points, signage, earthquake preparedness, fire escape procedures, emergency numbers, security personnel, and personal protective equipment, as applicable. This component ensures the sustainability of the programme and the long-term reinforcement of desired safety behaviour.

Result

Evacuation and Emergency Preparedness Infrastructure

As shown in Figure 2, infrastructure has been installed at SD Ummu Aiman to support emergency preparedness and evacuation. The siren and alarm were installed in the middle of the school under the complete control of security, as the ERT leader. Since the school did not have a fire extinguisher in service, several fire extinguishers were placed in high-risk areas, i.e., the kitchen and library. As many as 90 evacuation route signages were placed according to the evacuation map, leading towards the muster point, which was installed in the flag ceremony area, also known as the school assembly ground.

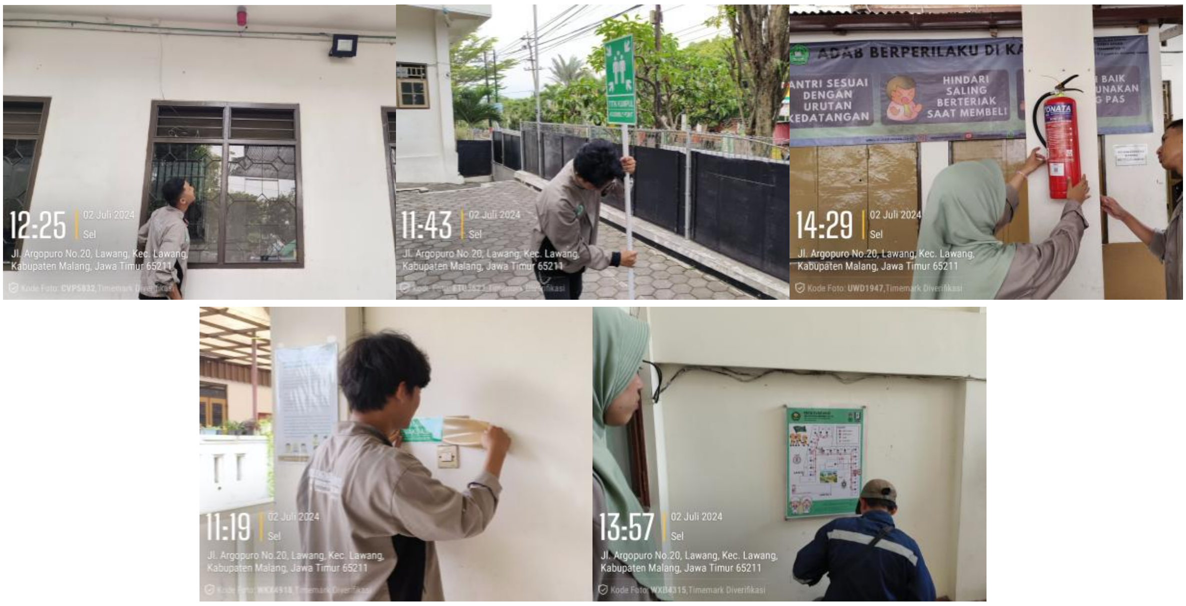

Figure 2. Installation of infrastructure for the emergency response and evacuation system

Safety and Health Awareness Training

An Occupational Health and Safety (OHS) expert from the industry was engaged in the awareness training, covering basic emergency response systems and practical aspects critical in evacuation. In addition to the training, tests were also conducted to see if the teachers' comprehension correlated with the awareness given. A set of 20 random questions covering five safety and evacuation aspects, i.e., safety behaviour, earthquake management, emergency preparedness, evacuation procedure, and fire management, was delivered as pre and post-test.

Of the 53 teachers who participated in the training, 41 participants, or 77.4% of the population, received more correct answers. On the other hand, 12 participants, or 22.6% of the population, did not experience an increase in the number of correct answers. No participants had lower marks after training. Overall, there is a significant increase ($t(52) = 8.69$; *p-val* < 0.001) in test results between the pre-test (M = 52.45, SD = 17.15) and post-test (M = 67.55, SD = 13.02). This suggests that the awareness training has enhanced teachers' understanding of emergency safety procedures. Nonetheless, although there was an increase in comprehension overall, not all five safety aspects had been significantly strengthened. As shown in Table 1, only safety behaviour and emergency preparedness were significantly improved by the teacher after awareness training. For earthquake management, evacuation procedures, and fire management, the following aspects must be conducted more thoroughly, as they were not sufficiently covered.

Table 1. The significance of the five safety aspects of comprehension increases between the pre-test and post-test

Safety Aspect	χ^2	***p-value***
Safety Behaviour	4.367	0.037
Earthquake Management	0.239	0.625
Emergency Preparedness	6.576	0.010
Evacuation Procedure	1.035	0.309
Fire Management	0.996	0.318

Additionally, a drill was performed using the earthquake and fire scenarios to provide more meaningful awareness. As shown in Figure 3, all teachers participated in this agenda. They reacted swiftly once the siren rang and proceeded progressively to the evacuation point, following instructions from the ERT leader and signage, and heading to the muster point. The evacuation was completed in under 3 minutes. After the post-evacuation evaluation, the trainer delivered a firefighting session using a fire extinguisher. Through this practical session, it is expected that the teachers will familiarise themselves with the procedure and be exposed to behaviour-based safety.

Figure 3. Evacuation drill and firefighting practice using a fire extinguisher

Safety and Health Induction Video

By engaging students as talents, a safety induction video was created to promote the safety culture for all interested parties at the school, including new students and visitors. The school plans to display the video regularly so that the viewers will understand the basic safety requirements at school, evacuation procedures and routes, how to deal with earthquakes and fires, as well as emergency hotline numbers and security assistance. Some footage of the video is shown in Figure 4.

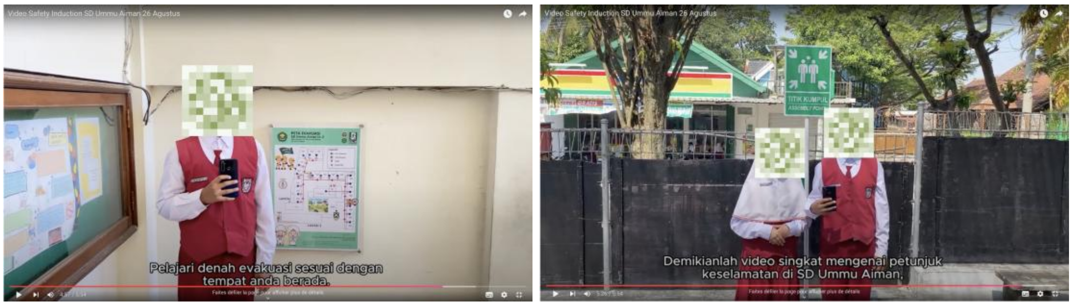

Figure 4. Footage of the safety induction video

Responses and Actions

During the drill and training, teachers actively led their own classes to the assembly point without depending on the facilitation team, which shows improved confidence and understanding of their roles. Several teachers also volunteered to join the Emergency Response Team (ERT) and requested additional practice with fire extinguisher use. During the group discussion session, teachers proposed scheduling evacuation drills twice a year and incorporating safety topics into weekly class meetings. After the programme, teachers also continued to play the safety induction video daily and reminded students to observe the evacuation routes and signage. These responses indicate positive bottom-up changes, where teachers are willing to maintain and improve the safety culture in the school.

Discussion

Emergency Preparedness in School

Integrating physical infrastructure and non-physical supporting elements, e.g., knowledge, skills, and regulation, is fundamental to countermeasure the high risk of incidents due to a disaster in a school. SD Ummu Aiman had never been exposed to this system until this community service was implemented. In contrast, elementary school is a fundamental stage in shaping children's characters, which they carry into adulthood [15]. Additionally, elementary schools demonstrated higher engagement in preparedness activities compared to secondary and other schools [16]. Hence, schools are responsible for delivering preparedness activities such as emergency planning, hazard education, and awareness training.

Awareness training provided significant improvements in safety knowledge and self-awareness in dealing with emergency occurrences. In this community service, 77.4% of participants significantly learnt about the safety aspects of emergency preparedness and evacuation. The knowledge increment for this fraction of participants was varied. Compared to the pre-training state, 1.9%, 3.8%, 13.2%, 26.4%, and 32.1% of participants gained seven, five, four, three, and two times more correct answers, respectively. On average, training has provided thrice as much knowledge as the baseline. It is known from another study that socialisation increased the self-readiness of students at school for the fire triangle concept, firefighting, and fire extinguisher usage at 88.24%, 100%, and 76.47%, respectively [17]. Another study showed that awareness training increased the number of sufficiently knowledgeable students on electrical safety (from 21.1% to 84.2%), floods (from 18.4% to 81.8%), and earthquakes (from 18.4% to 84.2%) [18].

Not only does theoretical knowledge focus on emergency preparedness, but practical skills also play a significant role. This includes reacting swiftly and efficiently during an emergency, using safety equipment, and providing first aid [19]. In this study, we have observed that the teachers finished the evacuation in under three minutes, and we expect this efficiency to be passed on to all students. This is important to prevent any casualties during an emergency event. Teachers must prepare the students to react swiftly once the siren rings and proceed to evacuation. A study has shown that a fast-

[15] Irwan Setiawan Muthalib, "Sosialisasi Budaya K3 (Kesehatan Keselamatan Kerja) Untuk Usia Dini Di Tingkat Sekolah Dasar IKIP 2 Kota Makassar," *JURNAL TEPAT : Applied Technology Journal for Community Engagement and Services* 1, no. 1 (June 2018): 17–22, https://doi.org/10.25042/jurnal_tepat.v1i1.22.

[16] Tipler et al., "Are You Ready?"

[17] Moch. Luqman Ashari et al., "Sosialisasi Kebakaran Dan Penangannya Pada Siswa Sekolah Dasar Di Surabaya Guna Meningkatkan Self-Readiness Terhadap Bencana Kebakaran," *Jurnal Cakrawala Maritim* 1, no. 1 (2018): 21–24.

[18] Rahman, Alwi, and Suharni, "Pengaruh Penerapan Modul K3 Sebagai Bahan Ajar Terhadap Pengetahuan Anak Sekolah Dasar Tentang Kesehatan Dan Keselamatan Kerja."

[19] Dian Tamitiadini, Isma Adila, and Wayan Wida Asmara Dewi, *Komunikasi Bencana: Teori Dan Pendekatan Praktis Studi Kebencanaan Di Indonesia* (Universitas Brawijaya Press, 2019).

reacting community is essential to increase the likelihood of safety during an emergency triggered by a mass notification system, such as a panic button [20].

A sound system starts with a good managerial level because the ineffective enforcement of safety measures begins with an inadequate managerial framework established by school administrators [21]. Some interventions that school management can implement to enhance safety include adding fire exits and railings on emergency stairs, installing more fire extinguishers in high-risk areas, conducting regular drills, and running awareness programs. Additionally, maintaining clear access to safety information and improving the visibility of safety apparatus is a key. Schools must also adhere to safety regulations issued by the authorities, for example, by constructing buildings to comply with safety standards and continuously developing teachers and staff to enhance their ability to deal with emergency responses and preparedness [22].

Behaviour-Based Safety

We have observed that the teacher's knowledge and skills in emergency preparedness have been enhanced. This might be a good start to implementing the behaviour-based safety culture at school. However, the homework focuses on how this culture is passed to the students, particularly the most significant community in the area, with a population approximately ten times that of the teachers. In addition, since children are more vulnerable to incorrect information and fearful of emergencies, teachers must be able to communicate effectively, engaging them in age-appropriate educational materials [23]. This is fundamental in accident prevention, as unsafe actions resulting from behavioural misconduct directly correlate with the number [24]. Therefore, the enforcement of behaviour-based safety plays a vital role.

Behaviour-based safety can be effectively transferred to students through coping mechanisms during daily educational programs. A study in elementary school showed that habituating students to solve problems in certain situations increased their preparedness for emergencies [25]. Indeed, the exposure of this strategy must align with

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[20] Chairul Yusuf Dau, Agus Lahinta, and Edi Setiawan, "Sistem Panic Button," *Diffusion: Journal of System and Information Technology* 1, no. 1 (2020): 192–97.

[21] Hassanain et al., "A Framework for Fire Safety Management in School Facilities."

[22] Ashfaq Ahmad Shah et al., "Disaster Risk Management Insight on School Emergency Preparedness – A Case Study of Khyber Pakhtunkhwa, Pakistan," *International Journal of Disaster Risk Reduction* 51 (December 2020): 101805, https://doi.org/10.1016/j.ijdrr.2020.101805.

[23] João M.C. Estêvão et al., "Earthquake Resilient Schools in Algarve (Portugal) and Huelva (Spain)," paper presented at Conference: 16th European Conference on Earthquake Engineering (16ECEE), Thessaloniki, Greece, *Conference: 16th European Conference on Earthquake Engineering (16ECEE)*, May 2018.

[24] Indriani et al., "Edukasi Siaga Bencana Kebakaran Pada Siswa Sekolah Dasar," *Genitri Jurnal Pengabdian Masyarakat Bidang Kesehatan* 2, no. 1 (June 2023): 13–18, https://doi.org/10.36049/genitri.v2i1.103.

[25] Shin-Jeong Kim et al., "The Effect of Coping Knowledge on Emergency Preparedness in Elementary School Students," *The Journal of School Nursing* 30, no. 5 (October 2014): 349–57, https://doi.org/10.1177/1059840513508325.

the student's grades, where basic concepts are introduced in lower grades, while the application can be provided. For instance, this program begins with emergency recognition, hazard identification, natural disaster preparedness, and first aid awareness. The safety culture can be established through continuous promotion, such as safety induction videos. Safety induction learning media have been acknowledged as effective in increasing awareness and reducing accidents in school settings. It was also deemed feasible by 89.05% of media experts, 83.33% of material experts, and 79% of students [26].

On the other hand, the knowledge and skills of teachers and students will not be sustained if exposure is limited to a single instance. Hence, it is critical to periodically re-expose the school to knowledge through scheduled evacuation drills and safety promotion programs. It is well understood that enhancing safety culture through training, socialization, and safety talks is necessary to retain knowledge and skills, and ultimately leads to a lower accident rate [27]. Therefore, the scheduled drill and continuous promotion of a safety culture by exposing students and visitors to safety induction are important. It is also worth considering engaging safety experts and workers to minimize curriculum biases. Introducing people to engaging with safety through live experience offers a more comprehensive approach to how safety is embraced in real life [28].

Raising awareness early in life can lead to a strong safety culture in adulthood. Hence, safety promotion must be embraced and become a lifelong commitment for all members of society. In this community service, we aim to introduce the concept of safety culture to elementary schools because we believe children are crucial to the future of humanity. By transferring knowledge and training them to prepare for emergency events, we are reducing the number of accidents and investing in a generation that can help change the public's attitude towards a safety culture.

Conclusion

Implementing evacuation and emergency preparedness infrastructure at SD Ummu Aiman significantly enhances the school's safety culture. Installing sirens, alarm systems, fire extinguishers, and clear evacuation signage establishes a solid foundation for effective emergency response. Training sessions led by an OHS expert significantly

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[26] A. G. Tamrin, Wahyu Noviansyah, and Barda Geniusa Wildatama, "Safety Induction Media Development for Students of Building Engineering Vocational Schools," 2022, 030001, https://doi.org/10.1063/5.0094231.

[27] Delly Safira Hedaputri, Rubayat Indradi, and Anung Putri Illahika, "Kajian Literatur: Hubungan Tingkat Pengetahuan Kesehatan Dan Keselamatan Kerja (K3) Dengan Kejadian Kecelakaan Kerja," *CoMPHI Journal: Community Medicine and Public Health of Indonesia Journal* 1, no. 3 (March 2021): 185–93, https://doi.org/10.37148/comphijournal.v1i3.27.

[28] Nicole Gerarda Power and Sumaiya Baqee, "Constructing A 'Culture of Safety': An Examination of the Assumptions Embedded in Occupational Safety and Health Curricula Delivered to High School Students and Fish Harvesters in Newfoundland and Labrador, Canada," *Policy and Practice in Health and Safety* 8, no. 1 (January 2010): 5–23, https://doi.org/10.1080/14774003.2010.11667739.

improved teachers' knowledge of emergency procedures, although ongoing focus on specific areas, such as earthquake management, is necessary for comprehensive preparedness. The successful evacuation drills, completed in under three minutes, highlight the effectiveness of hands-on training. Conducting regular drills and fostering a behaviour-based safety culture that empowers teachers and students is crucial to maintaining this progress. This initiative promotes safety awareness and preparedness, cultivating a generation committed to prioritizing safety and benefiting society in the long run.

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References

Anam, Khaerul, Muhammad Riyan Hidayatullah, and Lilik Evitamala. "Disaster Mitigation Trainig in Safe Education." *Abdinesia: Jurnal Pengabdian kepada Masyarakat* 2, no. 1 (2022): 15–18.

Ashari, Moch. Luqman, Tunjung R. Prastiwi, Aisyah R. Annabila, Niken R. Rahmadani, and Ariel Dwi Putra Kusuma. "Sosialisasi Kebakaran Dan Penangannya Pada Siswa Sekolah Dasar Di Surabaya Guna Meningkatkan Self-Readiness Terhadap Bencana Kebakaran." *Jurnal Cakrawala Maritim* 1, no. 1 (2018): 21–24.

Bedriye, A.k. "Determination and Evaluation of Effects of Earthquake on School Age Children's (6-12 Years Old) Behaviours." *Procedia - Social and Behavioral Sciences* 152 (October 2014): 845–51. https://doi.org/10.1016/j.sbspro.2014.09.332.

BPS Kab. Malang. *Kabupaten Malang Dalam Angka 2023*. Kabupaten Malang: Basan Pusat Statistik, 2023.

Dau, Chairul Yusuf, Agus Lahinta, and Edi Setiawan. "Sistem Panic Button." *Diffusion: Journal of System and Information Technology* 1, no. 1 (2020): 192–97.

Dewi, Anggita Ratna. "Penerapan Kebijakan Sekolah Siaga Bencana Tingkat Sekolah Dasar Di Yogyakarta." *HIGEIA (Journal of Public Health Research and Development)* 4, no. Special 1 (2020): 286–95.

Djaali, Nur Asniati, Syarif Usman, Rano Agustino, and Frenta Helena Simaibang. "Penerapan Kesehatan Dan Keselamatan Kerja (K3) Melalui Sosialisasi Potensi Bahaya Di Sekolah." *Jurnal Pemberdayaan Komunitas MH Thamrin* 2, no. 1 (March 2020): 34–43. https://doi.org/10.37012/jpkmht.v2i1.290.

Estêvão, João M.C., M. A. Ferreira, Antonio Morales-Esteban, Francisco Martínez-Álvarez, Luís Sá, María Victoria Requena García de la Cruz, and Carlos Sousa Oliveira. “Earthquake Resilient Schools in Algarve (Portugal) and Huelva (Spain).” Paper presented at Conference: 16th European Conference on Earthquake Engineering (16ECEE), Thessaloniki, Greece. *Conference: 16th European Conference on Earthquake Engineering (16ECEE)*, May 2018.

Faizah, Restu, Seplika Yadi, Muhammad Ibnu Syamsi, Retnowati Setioningsih, and Institut Teknologi Nasional Yogyakarta. “Pengukuran Dan Pelatihan Kesiapsiagaan Komunitas Sekolah Dasar Muhammadiyah Banyuraden Terhadap Bencana Gempa Bumi.” *Journal of Dedicators Community* 5, no. 1 (January 2021): 8–18. https://doi.org/10.34001/jdc.v5i1.1131.

Gerarda Power, Nicole, and Sumaiya Baqee. “Constructing A ‘Culture of Safety’: An Examination of the Assumptions Embedded in Occupational Safety and Health Curricula Delivered to High School Students and Fish Harvesters in Newfoundland and Labrador, Canada.” *Policy and Practice in Health and Safety* 8, no. 1 (January 2010): 5–23. https://doi.org/10.1080/14774003.2010.11667739.

Hassanain, Mohammad A., Mohammad Aljuhani, Mohammad B. Hamida, and Mohamed H. Salaheldin. “A Framework for Fire Safety Management in School Facilities.” *International Journal of Built Environment and Sustainability* 9, no. 2 (May 2022): 1–9. https://doi.org/10.11113/ijbes.v9.n2.901.

Hedaputri, Delly Safira, Rubayat Indradi, and Anung Putri Illahika. “Kajian Literatur: Hubungan Tingkat Pengetahuan Kesehatan Dan Keselamatan Kerja (K3) Dengan Kejadian Kecelakaan Kerja.” *CoMPHI Journal: Community Medicine and Public Health of Indonesia Journal* 1, no. 3 (March 2021): 185–93. https://doi.org/10.37148/comphijournal.v1i3.27.

Indriani, Sarinah Basri K, Nur Ayini S. Lalu, and Moh. Rivai Nakoe. “Edukasi Siaga Bencana Kebakaran Pada Siswa Sekolah Dasar.” *Genitri Jurnal Pengabdian Masyarakat Bidang Kesehatan* 2, no. 1 (June 2023): 13–18. https://doi.org/10.36049/genitri.v2i1.103.

Kim, Shin-Jeong, So-Ra Kang, Seung-Hee Lee, and Kyung-Ah Kang. “The Effect of Coping Knowledge on Emergency Preparedness in Elementary School Students.” *The Journal of School Nursing* 30, no. 5 (October 2014): 349–57. https://doi.org/10.1177/1059840513508325.

Muthalib, Irwan Setiawan. “Sosialisasi Budaya K3 (Kesehatan Keselamatan Kerja) Untuk Usia Dini Di Tingkat Sekolah Dasar IKIP 2 Kota Makassar.” *JURNAL TEPAT : Applied Technology Journal for Community Engagement and Services* 1, no. 1 (June 2018): 17–22. https://doi.org/10.25042/jurnal_tepat.v1i1.22.

Olcay, Zeynep F., Sertaç Temur, and Ahmet E. Sakalli. “A Research on the Knowledge Level and Safety Culture of Students Taking Occupational Health and Safety Course.” *Cypriot Journal of Educational Sciences* 16, no. 1 (February 2021): 187–200.

https://doi.org/10.18844/cjes.v16i1.5519.

Rahman, Muhammad Kidri Alwi, and Suharni. "Pengaruh Penerapan Modul K3 Sebagai Bahan Ajar Terhadap Pengetahuan Anak Sekolah Dasar Tentang Kesehatan Dan Keselamatan Kerja." *Journal of Muslim Community Health (JMCH)* 3, no. 2 (2022): 152–66.

Schildkraut, Jaclyn, and Amanda B. Nickerson. "Ready to Respond: Effects of Lockdown Drills and Training on School Emergency Preparedness." *Victims & Offenders* 15, no. 5 (July 2020): 619–38. https://doi.org/10.1080/15564886.2020.1749199.

Shah, Ashfaq Ahmad, Zaiwu Gong, Indrajit Pal, Ruiling Sun, Wahid Ullah, and Gowhar Farooq Wani. "Disaster Risk Management Insight on School Emergency Preparedness – A Case Study of Khyber Pakhtunkhwa, Pakistan." *International Journal of Disaster Risk Reduction* 51 (December 2020): 101805. https://doi.org/10.1016/j.ijdrr.2020.101805.

Tamitiadini, Dian, Isma Adila, and Wayan Wida Asmara Dewi. *Komunikasi Bencana: Teori Dan Pendekatan Praktis Studi Kebencanaan Di Indonesia*. Universitas Brawijaya Press, 2019.

Tamrin, A. G., Wahyu Noviansyah, and Barda Geniusa Wildatama. "Safety Induction Media Development for Students of Building Engineering Vocational Schools." 2022, 030001. https://doi.org/10.1063/5.0094231.

Thoyibah, Zurriyatun, Meidiana Dwidiyanti, Misroh Mulianingsih, Winda Nurmayani, and Reza Indra Wiguna. "Gambaran Dampak Kecemasan Dan Gejala Psikologis Pada Anak Korban Bencana Gempa Bumi Di Lombok." *Holistic Nursing and Health Science* 2, no. 1 (June 2019): 31–38. https://doi.org/10.14710/hnhs.2.1.2019.31-38.

Tipler, Karlene, Ruth Tarrant, David Johnston, and Keith Tuffin. "Are You Ready? Emergency Preparedness in New Zealand Schools." *International Journal of Disaster Risk Reduction* 25 (October 2017): 324–33. https://doi.org/10.1016/j.ijdrr.2017.09.035.

Vásquez, Andrea, Katitza Marinkovic, Margarita Bernales, Jorge León, Juan González, and Sebastián Castro. "Children's Views on Evacuation Drills and School Preparedness: Mapping Experiences and Unfolding Perspectives." *International Journal of Disaster Risk Reduction* 28 (June 2018): 165–75. https://doi.org/10.1016/j.ijdrr.2018.03.001.

Widowati, Evi. "Gambaran Penerapan Safety Education (Pendidikan Keselamatan) Di Sekolah Dasar." *Jurnal of Health Education* 2, no. 1 (2017): 66–72.