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Fire Safety Socialization for Elementary School Students Through Evacuation Route and Assembly Point Introduction at SDIT Nurul Ilmi Balikpapan

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ABSTRACT

Fire is one of the most serious threats to safety in schools. Lack of knowledge about evacuation procedures and safety symbols can increase the risk of casualties and material losses. This community service activity aimed to provide fire safety education by presenting material on fire evacuation simulations to students at SDIT Nurul Ilmi Balikpapan. The material presented included an understanding of fire simulations, steps to take in the event of a fire, and an introduction to evacuation route symbols and assembly points. The activity was attended by 42 students. The results showed an increase in students' understanding of basic fire safety concepts, awareness of the importance of evacuation routes, and the ability to recognize safety symbols. This education is expected to foster a culture of emergency response in elementary schools and strengthen the implementation of K3 principles.

INTRODUCTION

Fire is a serious risk that threatens safety in educational environments, particularly in elementary schools that accommodate large numbers of students and often have limited levels of emergency preparedness. Fire hazards in schools may originate from electrical installations, the use of flammable materials, or human negligence. Without an adequate evacuation system, fire incidents can result in casualties and substantial property loss. Therefore, fire safety education is essential to instill a culture of emergency preparedness from an early age. Previous research demonstrates that school-based fire preparedness programs significantly improve students' knowledge and skills related to fire response and evacuation procedures (Katramee & Thanjangreed, 2022).

Fire safety education delivered through structured and interactive learning activities has been proven effective in enhancing students' understanding of fire risks and appropriate response actions. Jang and Kong (2023) found that safety education programs utilizing fire extinguisher simulators significantly improved elementary school students' safety knowledge and problem-solving abilities related to fire emergencies. Similarly, digital and virtual learning tools have been identified as effective media for increasing student engagement and comprehension of fire safety concepts, particularly evacuation procedures and emergency response strategies (Wang et al., 2024).

In the Indonesian context, studies also highlight the importance of fire safety education in schools. Research conducted in elementary schools in Sangatta Utara revealed that fire safety education programs significantly increased students' understanding of basic fire concepts, evacuation routes, and the use of fire extinguishers, emphasizing the need to integrate fire safety education into school activities (Rusba et al., 2025). Furthermore, community-based fire safety socialization programs implemented in educational institutions have been shown to improve students' awareness and preparedness toward fire hazards through direct instruction and evacuation practice (Amiruddin et al., 2025).

This study aims to improve the understanding of students at SDIT Nurul Ilmi Balikpapan regarding fire experiments, appropriate actions during fire incidents, and the introduction of evacuation route symbols and assembly points. Through this socialization program, students are expected to develop adequate foundational knowledge of fire evacuation procedures and be able to identify safety symbols correctly. The contribution of this study lies in its focus on preventive education and

preparedness through simple, direct, and interactive delivery methods tailored to elementary school students.

Unlike previous studies that predominantly emphasized technical simulations or architectural evacuation analysis, this study prioritizes direct educational engagement by introducing evacuation route symbols and assembly points as part of a school-based fire safety culture. Therefore, this article provides an original contribution to community service–based fire safety education in elementary schools, which remains limited and underreported in a structured manner in Indonesia.

METHOD

This study that uses a community service approach based on fire safety education in schools. The focus of the study is on improving students' knowledge and skills in terms of the main things that need to be done when a fire occurs at school through socialization and hands-on activities.

1. Population and Sample/Research Subjects

The population in this activity was all students of SDIT Nurul Ilmi Balikpapan. The sample was selected purposively, namely sixth-grade students who were the target of socialization. The material presentation activity was carried out in two classes, so the total number of participants was sixth-grade students from those two classes.

2. Location and Time of Implementation

The activity was held at:
School : SDIT Nurul Ilmi Balikpapan
Address : Jl. Mulawarman Gg. Amal RT.18, Kelurahan Manggar, Kecamatan Balikpapan Timur, Kota Balikpapan, Kalimantan Timur 76116.

3. Data Collection Methods

Data collection was conducted through:
a. Observation during socialization activities.
b. Documentation in the form of photos and videos of the activities.
c. Informal interviews with participants regarding their understanding and impressions of the material.

4. Data Analysis Techniques

The data were analyzed using a qualitative descriptive approach. The pre-test and post-test results were analyzed to see the improvement in participants' understanding. Students' responses during the activity were observed to assess their involvement and enthusiasm. Visual documentation was used to support the narrative of the activity results. The analysis process was carried out through the following steps:
a. Data reduction
b. Data presentation
c. Drawing conclusions and verification

RESULT AND DISCUSSION

The fire safety awareness activity at SDIT Nurul Ilmi Balikpapan was successfully carried out with the participation of 42 students. The material presented included:

Table 1 Observation Results

Indicator	Observation results
Increased Knowledge	Students understand the concept of fire simulation and evacuation procedures.
Enthusiasm and Participation	Students actively ask questions and discuss safety symbols.
Ability to Recognize Symbols	Most students are able to explain the meaning of evacuation routes and assembly points.
Health and Safety Awareness	Students show concern for safety at school.

One important aspect raised during the outreach activity was the common mistakes still often made by students when faced with a potential fire, such as excessive panic, running aimlessly, or not paying attention to the designated evacuation routes. With a better understanding of evacuation

procedures, participants now have a solid foundation for acting calmly and purposefully when faced with an emergency. The introduction of evacuation route symbols and assembly points proved to be easily understood by students and is one of the international recommendations for fire safety systems in schools. This education also encourages the formation of an emergency response culture in the educational environment, making students not only participants in learning activities but also agents of safety for themselves and their classmates.

These findings are in line with previous studies, such as those cited by Safari et al. (2025) in Buildings Journal, which show that fire evacuation simulations in elementary schools improve the efficiency of evacuation routes and reduce the potential for panic. In addition, research by Rahmawati et al. (2025) confirms that systematic introduction of evacuation routes and assembly points plays an important role in increasing student preparedness for fire hazards. Thus, an educational approach based on fire safety material presentation has proven to be effective as a preventive measure in building safety awareness from an early age.

Table 2 Socialization and Activity Evaluation Components

No.	Components	Indicator
1.	Materials provided for Activity participants	Understanding fire evacuation drills, steps during drills, introduction to fire extinguishers, introduction to evacuation route symbols and assembly points.
2.	Delivery methods	Interactive presentations, question-and-answer sessions, simulation exercises.
3.	Success indicators	Active participation.
4.	Evaluation objectives	Assessing the effectiveness of socialization and understanding knowledge development.
5.	Activity participants	42 sixth-grade students at Nurul Ilmi Islamic Elementary School.

Picture 1 Presentation of Materials

Picture 2 Introduction To Evacuation Route Symbols And Assembly Points

Picture 3 Question And Answer Session With Participants

Picture 4 Documentation With Participants

During the implementation of fire safety awareness at SDIT Nurul Ilmi Balikpapan, several obstacles arose in the field. First, the varying levels of concentration among sixth-grade students meant that some participants were not fully focused during the presentation of the material. This was evident

when some students were more enthusiastic about the evacuation drill than listening to the explanation of evacuation route symbols and assembly points. Second, time constraints meant that the material had to be delivered concisely, so not all aspects of fire safety could be discussed in depth. For example, the use of fire extinguishers (APAR) could not be introduced in detail. Third, limited supporting facilities, such as permanent evacuation route posters in the school, meant that students had to rely solely on verbal explanations and simple visuals from the team.

To overcome these obstacles, the community service team implemented several solutions. First, the delivery method was made more interactive by involving questions and answers and brief discussions to keep students active and focused. Second, the material was prioritized on the main points most relevant to the school's conditions, namely the introduction of safety symbols, evacuation routes, and assembly points. Third, my team used simple visual media in the form of evacuation symbols and assembly point images displayed through presentations, and directed students directly to the assembly point location during the simulation. This way, students could understand more easily despite the limited supporting facilities. In addition, the team also recommended that the school continue the activity with periodic evacuation simulations to strengthen students' understanding and foster a culture of emergency response in the school environment.

CONCLUSION

The fire safety awareness activity, which included a presentation on fire evacuation simulation at SDIT Nurul Ilmi Balikpapan, proved to be effective in increasing students' knowledge and awareness of fire hazards. Through interactive explanations of evacuation procedures and the introduction of safety symbols, students were able to understand basic procedures and the importance of assembly points. This program contributes to the formation of an emergency response culture in schools and strengthens the implementation of K3 principles. Similar education is highly recommended to be implemented continuously in various educational institutions as a long-term preventive strategy.

REFERENCES

Amiruddin, J., Tanjung, H. F. Y., Maritza, S. R., Mulyani, S. A., Alfarisi, I. A., & Alfarizi, M. R. (2025). *Penyuluhan Keselamatan Kebakaran Di SMPN 199 Jakarta*. Prosiding Seminar Nasional Pengabdian Kepada Masyarakat 2025. Https://Journal.Unj.Ac.Id/Unj/Index.Php/Snppm/Article/View/51252

Jang, D. J., & Kong, H. S. (2023). Development Of A Safety Education Program Using Simulator Fire Extinguishers In Korea: Focusing On Elementary School Students. *Journal Of Education And E-Learning Research*, *10*(2), 294–298. Https://Asianonlinejournals.Com/Index.Php/JEELR/Article/View/4603

Katramee, A., & Thanjangreed, W. (2022). Effectiveness Of A School-Based Fire Preparedness Program On The Knowledge And Skills For Fire Response Among Primary School Students. *International Journal Of Occupational Safety And Health*, *12*(2), 89–96. Https://Www.Nepjol.Info/Index.Php/IJOSH/Article/View/64784

Rahmawati, F., Idham, N. C., & Ababsi, R. (2025). Analysis Of Evacuation Route And Fire Safety In Library Buildings: A Case Study Of The Main Library Of Universitas Islam Indonesia. *Arsitektura: Jurnal Ilmiah Arsitektur Dan Lingkungan Binaan*, *23*(2), 259–270. Https://Doi.Org/10.0.81.225/Arst.V23i2.109839

Rusba, K., Triyaningsih, Y. P., & Ramdan, M. (2025). Meningkatkan Kesadaran Terhadap Bahaya Kebakaran Bagi Usia Dini Melalui Program Edukasi Sekolah Dasar Di Kecamatan Sangatta Utara. *IDENTIFIKASI*, *11*(1), 79–84. Https://Jurnal.D4k3.Uniba-Bpn.Ac.Id/Index.Php/Identifikasi/Article/View/441

Safari, M., Afkhami, R., Amerzadeh, M., & Zaroushani, V. (2025). Simulation Of Fire Emergency Evacuation In A Primary School Based On Pathfinder Software. *Buildings*, *15*(1), 90. Https://Doi.Org/10.3390/Buildings15010090

Wang, H. S., Tsai, C. I., Liu, P. T., Chang, J. Y., & Yang, I. C. (2024). Exploring The Design Of Virtual Software For Fire Safety Education In Senior Elementary School Students. *Jurnal Ilmu Pendidikan Dasar Indonesia*, *4*(1), 37–46. Https://Etdci.Org/Journal/Judikdas/Article/View/2340