

Disaster Safe Education Unit (SPAB) Training in Malang City

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ABSTRACT

This community service activity aims to improve the preparedness of educational units in facing potential disasters through Disaster Safe Education Unit (SPAB) training. The training was conducted in three schools in Malang City, namely SDN Jatimulyo 3, MA Daruttauhid, and SDN Gadang 1, which were selected based on their low levels of vulnerability and preparedness. The method used was a participatory-educational approach through the stages of delivering disaster material, SPAB document preparation workshops, evacuation simulations, and psychosocial support training. The results of the activity showed a significant increase in the understanding and skills of school residents related to disasters, with an average increase in post-test scores of 40–45% compared to the pre-test. Observations and interviews also showed that the training encouraged changes in attitudes and behavior, including readiness to prepare and carry out emergency evacuation procedures. This activity strengthens the theory of contextual learning and community-based disaster education, and provides a practical contribution in the form of an applicable and easily replicable SPAB training model. The involvement of BPBD, IGI, and Dirgantara Rescue also strengthened the quality of the training. This SPAB training is expected to be a strategic model in building a disaster-resilient culture in educational environments.

Keywords: Disaster Education, Participatory Training, Resilient Schools

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INTRODUCTION

Increasing disaster preparedness capacity in schools is a strategic issue in disaster risk reduction in the education sector (Amelia et al., 2025; Bakhriansyah et al., 2025a; Nasution et al., 2025; Sunarto, 2024). One approach that has been developed is the Disaster-Safe Education Unit or known as *Satuan Pendidikan Alam Bencana* (SPAB), a concept that integrates disaster risk management into the education system to protect students, educators, and school infrastructure (Andung, 2024; Pambudi, 2022; Wijayanti et al., 2025). SPAB has become part of national policy through Minister of Education and Culture Regulation Number 33 of 2019, which emphasizes the importance of disaster preparedness and response in educational units (Kamaruddin, 2025; Putri et al., 2025; Raden et al., 2025). Several previous studies have shown that the implementation of SPAB can increase school resilience to disaster risks, especially if supported by ongoing training and

cross-sector collaboration (Haikal et al., 2021; Inggit Fandayati et al., 2024; Pambudi, 2022).

However, the implementation of SPAB in various regions still shows gaps, including in Malang City (Achmat & Hendriati, 2025; Aulia & Suhendi, n.d.; Iswadi et al., 2025; Nugraheni & Firmansyah, 2025; Saputro et al., 2025). Based on the findings of several studies, many educational units in the city do not have standard procedures for responding to disasters, do not conduct regular simulations, and have not developed systematic contingency plans (Haikal et al., 2021; Inggit Fandayati et al., 2024; Pahleviannur, 2019). This indicates a gap in implementation between national policy and practice at the educational unit level. One of the main contributing factors is limited human resource capacity, minimal technical training, and low synergy between schools and local disaster agencies (Partini & Hidayat, 2024; Ronggowulan et al., 2024; Sutinah et al., 2024; Wardhani et al., 2024).

Given this context, the goal of this community service activity is to give structured SPAB training to schools in Malang City in order to strengthen institutional capacity and improve school community preparedness for disasters. This activity analyzes elementary and secondary school modules through a participatory and collaborative method. This article will methodically explore the setting of the training implementation, the methodologies employed, the activity results, and the training's implications for school readiness. It is expected that this effort would make a significant contribution to bridging the gap between SPAB policy and practice at the local level.

As the risk of natural disasters increases in Indonesia, educational institutions are one of the sectors most vulnerable to impact (Achmat & Hendriati, 2025; Nurikhsan et al., 2025; Saputro et al., 2025; Wulandari et al., 2025). Schools serve not only as places of learning but also as spaces that must ensure the safety of all students (Putri et al., 2025). Therefore, the Disaster-Safe Education Unit (SPAB) approach is crucial for education-based disaster mitigation and adaptation efforts. SPAB refers to the integration of disaster risk management into the education system, encompassing institutional policies, curricula, and resilient infrastructure (Rahmayanti, 2021; Widiyarta & Arimurti Kriswibowo, 2023; Yusuf & Utomo, 2023). This concept is normatively reinforced in Minister of Education and Culture Regulation Number 33 of 2019, which encourages all educational institutions to systematically develop SPAB programs.

Several previous studies have highlighted the importance of implementing SPAB in various regional contexts. For example, a study by Wicaksono & Sibuea, (2022) in Yogyakarta showed that schools that regularly conducted disaster drills experienced significant improvements in earthquake preparedness. Similar findings were revealed by (Noviani et al., 2023; Oktavianto & Widodo, 2024; Pahleviannur, 2019), who emphasized that active teacher and student participation in disaster simulations had a positive impact on reducing the risk of loss of life and improving rapid response during disasters. However, a literature review shows that most research still focuses on post-disaster studies, risk mapping, or policy evaluation without directly testing participatory training interventions in schools.

This is the area of research that this activity is based on. In contrast to earlier descriptive or evaluative methods, the goal of this community service project is to create and execute practical and useful SPAB instruction for Malang City schools. This city was selected due to a number of research and assessments, (Haikal et al., 2021; Inggit Fandayati et al., 2024), many educational institutions lack standard operating procedures (SOP) for disaster management, have not developed contingency plans, and do not regularly conduct evacuation simulations. The lack of training and limited collaboration with local disaster management agencies are hampering SPAB implementation at the school level. This situation creates a gap between the national policy framework and the reality on the ground.

Theoretically, training, as a form of knowledge transfer and institutional capacity building, is an integral part of disaster risk reduction strategies (Andung et al., 2024; Septikasari & Ayriza, 2018). With a participatory, locally-driven approach, the training is expected to improve school residents' understanding of risk management, strengthen emergency response procedures, and foster a culture of disaster preparedness. Therefore, this activity was designed as part of a community service program involving academics, educators, and representatives from the Malang City Regional Disaster Management Agency (BPBD).

By using a workshop approach and disaster simulation, a participatory activity method was employed. Teachers, principals, and student representatives from Malang City's elementary and secondary schools were the primary targets. Three steps were involved in the activity: (1) determining the needs and preparedness of the school through preliminary observations and interviews; (2) disaster training and simulations that included information on risk identification, SOP preparation, and evacuation procedures; and (3) evaluating the activity to determine how participant knowledge and preparedness had changed following the training. The results of this activity are expected to become a model for SPAB training that can be replicated in other areas with similar contexts, as well as strengthening partnerships between educational institutions and disaster agencies.

The novelty of this research lies in the school-community-based training model with a collaborative approach that has not been widely developed in the context of SPAB in urban areas such as Malang City. Unlike conventional one-way training, this training model facilitates the active involvement of all school elements – principals, teachers, students, and school committees – in developing disaster preparedness strategies. Furthermore, the program integrates field simulations, psychosocial training, and an introduction to disaster risk mitigation technologies. As a form of community service, this activity not only strengthens disaster literacy within the school environment but also expands its impact on the surrounding community through the school's approach as a center for community preparedness. In other words, the novelty of this research lies in its practical, inclusive, and action-based approach, which has not been widely used in previous research, and specifically targets schools in disaster-prone areas such as Malang City.

This community service research aims to identify and strengthen disaster preparedness capacity in educational units in Malang City through Disaster Safe Education Unit (SPAB) training. The main focus is on how schools can develop

emergency response plans, increase risk awareness, and conduct evacuation simulations effectively. Issues to be examined include the low knowledge and skills of school residents in dealing with disasters, the lack of official SPAB documents in schools, and weak links between schools and external parties such as the Regional Disaster Management Agency (BPBD) and the Indonesian Red Cross (PMI). This research will explore the extent to which training can improve preparedness and whether a participatory training approach is more effective than conventional methods. Another objective is to develop a training model that can be replicated in other regions, while also providing policy input to the education office and related agencies. Therefore, this training is expected to provide a concrete solution to the weak disaster preparedness in the primary and secondary education sectors in Malang City.

This research is based on the argument that participatory and contextual training can significantly improve disaster preparedness in educational institutions. The primary rationale behind this argument is that the active involvement of the entire school community in the training process creates a sense of ownership of the emergency response plan, leading to more effective implementation in the field. Preliminary evidence from similar training in other areas indicates an improved rapid response during real-life disasters. Furthermore, a sustainable and collaborative training approach allows for adaptation to the local needs of each school. Therefore, the effectiveness of SPAB training in Malang City will be tested using participatory and hands-on practice methods in the school environment. In conclusion, training that is not only theoretical but also applicable will have a greater impact on creating safe, resilient, and adaptive educational institutions to the increasing disaster risks in urban areas.

METHOD

In order to increase disaster preparedness, this community service project employs a participatory-educational strategy that places a high priority on the active participation of all school personnel, including instructors, students, and support staff. This method is thought to be pertinent and trustworthy since it gives participants the opportunity to actively engage in creating readiness documents and running simulations in addition to receiving information. This activity is implemented as an applied case study, which explores in depth the dynamics of SPAB training in three different educational units in Malang City. The case studies were selected to understand how training interventions are implemented in the context of schools with diverse geographic characteristics and preparedness.

The subjects of this activity were school residents at three educational institutions selected based on their low level of preparedness and high potential for disaster risk: SDN Jatimulyo 3, MA Daruttauhid, and SDN Gadang 1. These schools represent elementary to secondary education levels, with representation from highland and lowland areas prone to flooding, earthquakes, and landslides. The presence of the community service implementation team, including researchers and facilitators, was active throughout the activity as observers and companions. Key informants in data collection were the principal, teachers, and representatives of students and parents involved in the activity.

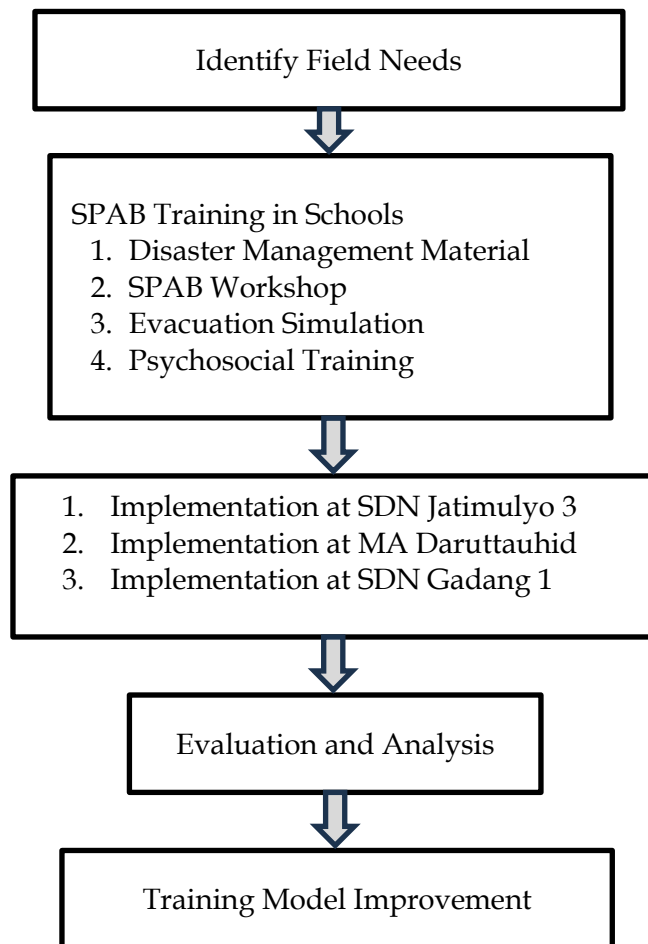


Figure 1. Stages of Community Service Activities

The first step in implementing the activity procedures was identifying field needs through preliminary observations and correspondence with the institution. The training that followed was divided into four primary parts. The first part was providing a disaster materials, which included risk mapping, emergency response plans for schools, and an introduction to the types of disasters that occur in the area. Second, a workshop on preparing SPAB documents, where participants were trained to develop evacuation Standard Operating Procedures (SOPs) and contingency plans. Third, an evacuation simulation, which is a field exercise related to self-rescue procedures when a disaster occurs. Fourth, psychosocial training, which teaches basic psychological first aid (PFA) skills to teachers as an initial step in post-disaster recovery. These activities were carried out sequentially at three locations: SDN Jatimulyo 3 on April 25, 2025, MA Daruttauhid on May 21, 2025, and SDN Gadang 1 on May 22, 2025.

The training was facilitated by various institutions, including the Malang City Regional Disaster Management Agency (BPBD), the Indonesian Teachers Association (IGI), and the Dirgantara Rescue team. The selection of external facilitators was intended to ensure the validity of the content and the alignment of the training methods with national disaster technical standards. Various media, such as printed modules, worksheets, simple risk maps, and evacuation simulation tools, were used throughout the training.

Data collection techniques included participant observation, semi-structured interviews, and the distribution of pre- and post-test questionnaires to training participants. The questionnaire instrument was developed based on disaster preparedness indicators according to the SPAB (Disaster Preparedness Assessment) and National Education Standards (Standard Pendidikan Nasional), which encompass the knowledge, attitudes, and skills of school residents in facing disasters. The instrument's validity was substantively tested through discussions with disaster and education experts.

Descriptive and qualitative analysis was used to compare the training's the starting point and final circumstances, including participant knowledge changes, their capacity to create SPAB documents, and the use of evacuation scenarios. The findings of the analysis served as the foundation for enhancing the training model for comparable tasks in the future and were utilized to evaluate the efficacy of the strategy employed. Data validity was maintained through source triangulation techniques, namely by comparing data from observations, interviews, and pre-post test results, as well as member checking with the principal to ensure that the findings reflected actual conditions in the field.

RESULTS AND DISCUSSION

RESULTS

The Disaster Safe Education Unit (SPAB) training was conducted in three schools in Malang City: SDN Jatimulyo 3, MA Daruttauhid, and SDN Gadang 1. These three schools were selected based on their level of vulnerability to disasters and the level of preparedness of the school community, which still needs to be improved. The training activities were structured in several stages, starting with socialization, a pre-test to measure participants' initial knowledge, then continued with the delivery of material using participatory lecture methods and case studies. After that, a disaster evacuation simulation was conducted as a practical exercise in the field, then concluded with a post-test and assistance in preparing a school-based emergency response plan.

The training materials focused on four main components of SPAB: an introduction to the types of local disasters that could potentially occur in the school area, appropriate evacuation steps, the organizational structure of the school emergency response team, and basic training in psychological first aid (PFA). With this scope of material, the training aimed not only to improve participants' theoretical knowledge but also to strengthen practical skills that could be directly applied in the context of each school. All materials were tailored to the geographic and social conditions of each school, so that participants could understand the risks and solutions relevant to their environment.

The training involved facilitators from the Malang City Regional Disaster Management Agency (BPBD), the Indonesian Teachers Association (IGI), and the Dirgantara Rescue team. This multi-stakeholder involvement ensured a collaborative, practical, and contextual approach to the training, as the facilitators brought valuable field experience and technical expertise to the learning process. Furthermore, the presence of external facilitators ensured that the content aligned

with national disaster management standards and supported the development of a sustainable disaster preparedness culture within the school environment.

To assess the extent to which the Disaster Safe Education Unit (SPAB) training successfully improved participants' understanding, a pre-test and post-test were used as evaluation instruments. This evaluation aimed to measure changes in participants' knowledge before and after participating in a series of training sessions, which included lectures, case studies, evacuation simulations, and document preparation workshops. These measurements were conducted systematically at three schools where the program was implemented: SDN Jatimulyo 3, MA Daruttauhid, and SDN Gadang 1. The results are summarized in Table 1, which shows a comparison of the average participant scores as a percentage.

Table 1. Results of Pre-Test and Post-Test of SPAB Understanding

School	Pre-Test Average (%)	Post-Test Average (%)	Increase (%)
SDN Jatimulyo 3	48	88	40
MA Daruttauhid	42	86	44
SDN Gadang 1	45	90	45

Table 1 shows that the pre-test results illustrate the participants' initial low level of understanding. The average pre-test score across the three schools was below 50%, with the lowest score recorded at MA Daruttauhid (42%), followed by SDN Gadang 1 (45%) and SDN Jatimulyo 3 (48%). This indicates that prior to the training, most school residents did not have an adequate understanding of basic disaster concepts, evacuation procedures, emergency response structures, and psychological first aid. This fact reinforces the urgency of SPAB training to improve school preparedness for potential disaster risks.

Following the training, there was a significant improvement in post-test scores at all three schools. The average post-test scores showed a sharp increase, with SDN Gadang 1 achieving 90%, SDN Jatimulyo 3 achieving 88%, and MA Daruttauhid achieving 86%. This improvement indicates that the material presented during the training was well understood by the participants and effectively addressed basic disaster knowledge needs. This jump in scores also indicates the success of the participatory educational approach used during the training process.

In terms of percentage improvement, SDN Gadang 1 showed the most significant results with a 45% increase, followed by MA Daruttauhid (44%) and SDN Jatimulyo 3 (40%). Although all schools experienced significant improvement, the variation in percentages could be due to several factors, such as the participants' prior knowledge, the intensity of participation during the training, and the facilitator's ability to adapt the material to the participants' characteristics. These findings can serve as a basis for developing more contextual training strategies in the future.

Overall, the pre-test and post-test data demonstrate that the SPAB training positively impacted participants' understanding. This quantitative evaluation was reinforced by observations and interviews during the training, which

demonstrated the enthusiasm and active involvement of school members in every stage of the training. Therefore, this activity not only contributes to short-term knowledge gains but also has the potential to strengthen a culture of disaster preparedness within the school environment on an ongoing basis.

Teacher Interview Quote – MA Daruttauhid:

"Before this training, we didn't know there was a SPAB document, and had never had an evacuation drill. Now we understand that we must have an evacuation route, SOP, and also know who does what in an emergency."

A teacher from MA Daruttauhid frankly revealed that before participating in the SPAB training, their school lacked a sufficient understanding of disaster preparedness efforts. He stated that the SPAB document was completely unfamiliar, and evacuation drills had never been conducted. This situation reflects the reality in many educational institutions that have not yet made disaster risk management an integral part of the education system. This gap demonstrates the need for a more comprehensive and comprehensive expansion of the preventive approach in disaster education, particularly in schools located in high-risk areas.

The interview also revealed that the SPAB training significantly improved the school community's understanding. After the training, the teacher admitted to beginning to appreciate the importance of clear evacuation routes, developing Standard Operating Procedures (SOPs) for emergency response, and systematically assigning tasks during a crisis. The phrase "who does what in an emergency" illustrates an increase in disaster literacy, particularly in the previously unstructured aspects of coordination and roles and responsibilities. This indicates that the training not only enhanced knowledge but also instilled technical skills and a prepared attitude.

This change in attitude is inseparable from the training method used, namely a participatory-educational approach. The training is designed in such a way that participants not only listen to theory but also actively participate in discussions, simulations, and the development of concrete action plans. Direct experience through field practice provides a deeper and more lasting understanding, enabling participants to connect the material to real-world conditions in their respective schools. This aligns with the principle of andragogy, which states that adult learning is more effective when linked to practical experience.

Furthermore, the training's impact was also reflected in the emergence of collective awareness at the school level. Teachers began developing plans to create SPAB documents, design evacuation routes, and form school emergency response teams. These initiatives are early indicators of the development of a disaster preparedness culture within the educational environment. The desire to take action and improve independently after the training was a significant success of this community service activity, as it signified the internalization of preparedness values in the daily practices of the school community.

Overall, these interviews provide a concrete picture of the success of the SPAB training program in building school awareness and capacity in disaster

preparedness. The transformation from ignorance to understanding, from passivity to activity, is the result of a systematically designed learning process that responds to field needs. These findings also emphasize the importance of replicating similar programs in other educational institutions, particularly in disaster-prone areas, so that preparedness becomes an integral part of the national education system.



Figure 2. Documentation of SPAB Training

Figure 2 shows documentation of the Disaster Safe Education Unit (SPAB) training conducted at one of the program's participating schools. The documentation demonstrates the active involvement of all school components, from students and teachers to educational staff. They appeared to be participating in the evacuation drill with full enthusiasm, demonstrating an increased collective awareness of the importance of disaster preparedness within the educational unit. This demonstrates that the training was not merely a formality but also effectively fostered genuine participation from all members of the school community.

Active participation in evacuation drills is a key indicator of the success of the participatory-educational approach used during the training. During the simulation, each individual played their respective roles according to a pre-designed emergency scenario. The teacher directed students to a safe assembly point, while several students with specific roles helped organize evacuation routes. This visualization demonstrates that the training material goes beyond theoretical understanding and is directly applied in a realistic and contextual simulation.

The documented evacuation simulation also demonstrates how the training successfully fosters a mindset and responsiveness to emergency situations. This exercise provides participants with firsthand experience of the importance of quick thinking, appropriate action, and maintaining interpersonal coordination. For the students, this experience provides crucial preparation for facing a real disaster, where panic and unpreparedness can be major causes of casualties. This documentation also serves as evidence that the simulation has transformed participants' perception of disasters, from something frightening to something that requires rational preparation.

More than just physical training, this activity also fostered a culture of disaster preparedness within the school community. Mutual assistance, effective communication, and orderliness during evacuation demonstrated that the training

successfully instilled the values of togetherness and shared responsibility. Images of students walking together, following the teacher's directions, and maintaining discipline during the evacuation reflected the tangible results of the lessons learned. This process is crucial in developing collective habits that will be useful in future emergency situations.

Overall, the documentation in Figure 1 serves not only as a visual record of the activity's implementation but also as a reflection of the success of the SPAB training in increasing awareness, skills, and a culture of preparedness in schools. The active involvement of all school elements in the evacuation drill demonstrates that the training has had a broad and sustainable impact. Such documentation is also important as evaluation material and inspiration for other schools to adopt and implement similar programs to create safe and disaster-resilient learning environments.

DISCUSSION

Based on pre- and post-test results, the SPAB training had a significant impact on improving the understanding and preparedness of school residents. All target schools showed an average increase in understanding of more than 40%, a substantial achievement in the context of short-term training. This increase demonstrates that the educational and participatory approach used in the training effectively delivered the material to participants. This improvement was reflected not only in the numbers but also in changes in behavior and enthusiasm among school residents during simulations and discussion sessions.

Prior to the training, the school community, particularly teachers and students, lacked adequate knowledge of SPAB, both conceptually and in terms of implementation. The SPAB document was unfamiliar, and there had been no systematic effort to develop an emergency response plan at the school. In fact, evacuation drills, a basic procedure in disaster mitigation, had never been conducted. This situation suggests that prior to the training intervention, disaster preparedness had not yet become part of the school culture, despite the high potential risk to their environment.

After the training, a significant transformation occurred, with participants not only understanding the components of the SPAB document but also being able to structure it contextually according to the characteristics of their respective schools. They began to understand the importance of having evacuation routes, establishing an emergency response organizational structure, and developing clear standard operating procedures (SOPs). The evacuation simulation provided participants with hands-on experience in carrying out their respective roles in emergency situations. This activity also fostered an attitude of order, calm, and responsiveness, which are crucial in facing a real disaster.

In terms of impact, this training has successfully brought positive changes not only in knowledge but also in the practical preparedness of the school community. Teachers, students, and education staff now know proper evacuation procedures and understand the coordination process in the event of a disaster. They have also begun to understand the importance of psychosocial support in aiding post-disaster recovery, especially for students who have been emotionally

impacted. However, the training also revealed several challenges that still need to be addressed in future program development.

Several challenges identified during the training included limited physical facilities and training time. In some schools, adequate evacuation routes or safe and strategic assembly points were not yet available, necessitating additional interventions in the form of infrastructure improvements. Furthermore, the relatively short training period meant that material on psychosocial support (PFA) was not fully covered. This is an important consideration for further development of the SPAB training model to make it more comprehensive, including extending the training duration or conducting regular follow-up mentoring sessions.

The implementation of this training can also be examined from the perspective of participatory learning theory. Based on Kolb's experiential learning theory, a learning process based on real-life experiences can increase participant understanding and engagement (Safitri, 2025; Syaifullah et al., 2021). This also aligns with Freire's view that dialogic and liberating education can foster critical awareness and collective action (Addina & Hanif, 2025). This finding also aligns with research findings (Akbar et al., 2025; Bakhriansyah et al., 2025b; Mulyandari et al., 2025; Sunarto, 2024), which show that participatory, locally-based disaster training can improve overall school resilience. Interestingly, schools located in densely populated and high-risk areas, such as SDN Gadang 1, showed the highest increase in understanding. This indicates that environmental factors influence participants' awareness and motivation to actively participate. Thus, local context is a crucial consideration in disaster training design.

Overall, this community service activity successfully achieved its primary objective, which was to improve the school community's understanding and preparedness for disaster risks. In addition to significantly improving knowledge scores, the training also resulted in changes in attitudes and skills in developing emergency response plans. Therefore, this SPAB training has the potential to be replicated in other schools, adapting it to their respective contexts and needs. Integrating this program into the school curriculum, involving the surrounding community, and strengthening psychosocial and inclusive aspects are recommendations for future implementation.

CONCLUSION

The SPAB training conducted in Malang City successfully catalyzed a transformation in disaster preparedness within schools, encompassing attitudes, institutional structures, and external partnerships. This activity demonstrated that a participatory-educational approach combined with hands-on practice can foster a more contextual understanding and awareness of disaster risk. Participating schools not only actively engaged during the training but also demonstrated post-training initiatives to build more responsive and adaptive internal systems.

During its implementation, this program also generated added value in the form of collaborative relationships between schools, disaster management technical institutions, and volunteer communities. This collaboration created a space for ongoing mentoring that strengthened schools' capacity to respond to disasters in a more targeted manner. The hands-on experience gained by

participants fostered a sense of ownership of the program, so that SPAB was no longer viewed as an external instruction but rather as an integral part of the school culture.

However, several challenges remain in program implementation, including limited time for in-depth psychosocial material, limited supporting infrastructure such as adequate evacuation routes, and the lack of a dedicated budget for SPAB activities in schools. Furthermore, the potential for disruption to program sustainability could arise due to the rotation or transfer of key personnel, such as teachers and principals, which could impact implementation continuity. This indicates that the program's success remains highly dependent on structural support and policy sustainability at the education office level.

These results indicate that more training and financial support are required in order to integrate SPAB into strategic regional education programs and reinforce policies. Additionally, in order to guarantee the program's efficacy and sustainability, it is essential to create monitoring systems and record best practices that other schools can use as models. Additionally, this is essential for ensuring long-term, regular SPAB deployment rather than merely a temporary training initiative.

It is highly encouraged that future studies examine the efficacy of SPAB training in more general settings, such as inclusive schools, Islamic residential schools, or regions with particular disaster risks like forest fires or tsunamis. It is also necessary to do a thorough investigation into how the training affects long-term behavioural changes in school residents. The outcomes of this community activity can therefore be used as a foundation for creating a relevant, adaptable, and replicable SPAB model for use in Indonesia's numerous educational institutions.

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