

SCHOOL AS A SAFE SPACE: A STUDY ON THE IMPLEMENTATION OF THE SPAB PROGRAM AT SDIT AL-BIRUNI MAKASSAR

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Abstract

The implementation of the Disaster-Safe Education Unit Program (Satuan Pendidikan Aman Bencana, SPAB) is a strategic effort to enhance preparedness and resilience in educational institutions against disaster risks. This study aims to analyze the planning, implementation, evaluation, as well as supporting and inhibiting factors of SPAB implementation at SDIT Al-Biruni Mandiri Makassar. The research employed a qualitative approach with a case study design. Data were collected through in-depth interviews with the principal, teachers, students, parents, and an external partner, Human Initiative, supported by observations and documentation. Data analysis was conducted through data reduction, data display, and conclusion drawing. The findings indicate that SPAB planning at the school has referred to the three main pillars of SPAB, namely the provision of disaster-safe facilities and infrastructure, the strengthening of disaster management, and disaster risk reduction education integrated into learning activities. Program implementation was carried out through disaster education, training, and simulation activities with support from external partners. Program evaluation was conducted periodically; however, it has not yet been systematically documented. Key supporting factors include strong leadership commitment and cross-sector partnerships, while limitations in facilities and limited understanding among lower-grade students remain the main inhibiting factors. This study highlights the importance of strengthening comprehensive planning and sustainable evaluation to establish schools as safe spaces in disaster contexts.

Keywords: Disaster-Safe School, Disaster Preparedness, Elementary Education



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INTRODUCTION

Indonesia is a country that has a high level of vulnerability to natural disasters because its geographical location is in the Pacific Ring of Fire region. This condition makes Indonesia prone to experiencing various types of disasters such as earthquakes, tsunamis, volcanic eruptions, floods, and landslides.¹ An area in South Sulawesi that also has high vulnerability to disasters is the city of Makassar. As the provincial capital, Makassar is an important economic and educational center in Eastern Indonesia. However, its geographical location in the lowlands makes it particularly vulnerable to floods, especially during the rainy season.²

In the context of education, disasters have the potential to cause serious disruption to the sustainability of teaching and learning activities. Affected schools can experience infrastructure damage, loss of access to education, and disruption to students' psychological well-being. Therefore, the integration of disaster mitigation education is a very important strategic step. The government through the Ministry of Education, Culture, Research, and Technology in collaboration with BNPB has developed the Disaster Safe Education Unit (SPAB) Program as an effort to build a culture of preparedness in schools. This program includes planning, implementation of simulations and training, provision of mitigation facilities, and integration of disaster materials into the school curriculum.³

Ideally, schools are expected to be safe, resilient, and adaptive to disaster risk. The Government of Indonesia has responded to these needs through the Disaster Safe Education Unit (SPAB) Program policy regulated in the Regulation of the Minister of Education and Culture Number 33 of 2019. This program emphasizes three main pillars, namely the provision of disaster safe facilities and infrastructure, strengthening disaster management management, and disaster prevention and risk reduction education that is integrated into the learning process.⁴ However, in practice, the implementation of SPAB in various schools still faces a number of challenges, such as

¹ Lilik Tahmidaten and Wawan Krismanto, "Implementasi Pendidikan Kebencanaan Di Indonesia (Sebuah Studi Pustaka Tentang Problematika Dan Solusinya)," *Lectura : Jurnal Pendidikan* 10, no. 2 (2019), <https://doi.org/10.31849/lectura.v10i2.3093>.

² Rimba Arif and Andi Nilawati, "Kajian Tingkat Kerawanan Bencana Banjir Dan Kebakaran Di Kecamatan Manggala, Kota Makassar," *Jurnal Ilmiah Ecosystem* 24, no. 3 (2024), <https://doi.org/10.35965/eco.v24i3.5440>.

³ Irfan Reihandhiya Rinaldi and Asep Yudi Permana, "Tingkat Kerentanan Bencana Pada Sekolah Kasus: Sekolah Menengah Kejuruan (SMK) Negeri Di Kota Bandung," *Jurnal Arsitektur ZONASI* 2, no. 1 (2019), <https://doi.org/10.17509/jaz.v2i1.14744>.

⁴ Kemendikdasmen, "News: Kemendikdasmen Tingkatkan Kesadaran Khalayak Tentang Kesiapsiagaan Dan Mitigasi Bencana Di Sekolah," Kemendikdasmen, March 20, 2025, https://www.kemendikdasmen.go.id/en/news_search/12542-kemendikdasmen-tingkatkan-kesadaran-khalayak-tentang-kesiapsiagaan-dan-mitigasi-bencana-di-sekolah.

limited resources, low understanding of school residents, and the assumption that disaster programs are only administrative and incidental.⁵

A number of studies in the last ten years have shown that the success of SPAB implementation is greatly influenced by the commitment of school leaders, the active involvement of teachers and students, and partnerships with external parties such as BPBD and humanitarian institutions.⁶ Nonetheless, most studies have focused more on schools in areas with high disaster risk. Studies on the implementation of SPAB in schools in areas with relatively low levels of vulnerability are still limited, even though disaster preparedness is preventive and needs to be built before disasters occur.⁷

Based on these gaps, this study focuses on the implementation of the SPAB Program at SDIT Al-Biruni Mandiri Makassar as a private, religious-based elementary school that seeks to build a disaster safe culture gradually and contextually. This research has a novelty value because it examines SPAB not only as a disaster technical policy, but as part of an educational practice that fosters awareness, participation, and collective responsibility of all school residents. Thus, this research is expected to make a conceptual and practical contribution to the development of SPAB implementation in educational units, especially in the context of Islamic-based private elementary schools in urban areas.

RESEARCH METHODS

This research uses a qualitative approach with a case study type of research. This approach was chosen to gain an in-depth understanding of the implementation of the Disaster Safe Education Unit (SPAB) Program at SDIT Al-Biruni Mandiri Makassar as a phenomenon that takes place in the natural context of the school. The case study allows researchers to comprehensively explore the planning, implementation, evaluation, and supporting and inhibiting factors of the SPAB program based on the perspectives of various parties involved.

The research was carried out at SDIT Al-Biruni Mandiri Makassar in the 2024/2025 school year. The research subjects were determined purposively, including principals, teachers, students, parents, and external partners of the school from the Human Initiative humanitarian agency. The

⁵ Mudzrikatun Chabibah et al., "Enhancing Community Preparedness for Disasters through the Safe School Program (SPAB) in Cilacap Regency," *Empower : Jurnal Pengembangan Masyarakat Islam* 10, no. 1 (2025), <https://doi.org/10.24235/empower.v10i1.19934>.

⁶ Ike Fitri Samsiyah et al., "Studi Penilaian Satuan Pendidikan Aman Bencana (SPAB) Sekolah Berbasis Keagamaan Di Kabupaten Cilacap," *Indonesian Journal of Environment and Disaster* 4, no. 2 (2025), <https://doi.org/10.20961/ijed.v4i2.2547>.

⁷ LPPM Unjaya, "Kesiapsiagaan Bencana Di Sekolah," *LPPM Unjani Yogyakarta*, October 1, 2024, <https://lppm.unjaya.ac.id/kesiapsiagaan-bencana-di-sekolah/>.

selection of informants is based on their direct involvement in the planning and implementation of SPAB programs in schools.

Data collection was carried out through three main techniques, namely in-depth interviews, observations, and documentation. The interview was conducted in a semi-structured manner using interview guidelines that were prepared based on the focus of the research, including aspects of planning, implementation, evaluation, as well as supporting and inhibiting factors of SPAB. Observations were carried out to directly observe the implementation of disaster education activities, evacuation simulations, and disaster preparedness training, as well as the involvement of school residents in these activities. Documentation is used to collect supporting data in the form of program planning documents, activity photos, school reports, and archives of cooperation with external parties.

Data analysis is carried out qualitatively through the stages of data reduction, data presentation, and conclusion drawn. Data from interviews, observations, and documentation were coded and grouped according to the focus of the research to find patterns, themes, and linkages between the data. The validity of the data is maintained through source triangulation techniques and techniques, by comparing data from interviews, observations, and documentation to ensure the consistency and credibility of research findings.

RESULTS AND DISCUSSION

Results

Disaster Safe Education Unit (SPAB) Program Planning

The results of the study show that the planning of the Disaster Safe Education Unit (SPAB) Program at SDIT Al-Biruni Mandiri Makassar is carried out through systematic stages and involves various elements in the school environment. This is in line with the concept of SPAB which emphasizes the importance of participatory planning and the involvement of all school residents in disaster risk reduction efforts in educational units. Planning begins with an internal agreement between the school regarding the importance of disaster preparedness as part of efforts to protect school residents. This agreement was then followed up through a coordination meeting involving school leaders, teachers, education staff, and school committee representatives. The involvement of these various stakeholders is in line with the findings of previous research which states that the success of SPAB planning is greatly influenced by the commitment and collaboration of all elements of the school community.⁸ The main focus in planning is the identification of potential

⁸ Muhammad Reza et al., "Sekolah Tangguh Bencana: Pendampingan Literasi Kebencanaan Bagi Siswa Dan Guru," *Aksi Kita: Jurnal Pengabdian Kepada Masyarakat* 2, no. 1 (2026), <https://doi.org/10.63822/yjqxj64>.

disaster risks that may occur in the school environment. Although the school is not in an area prone to major natural disasters, the school is aware of the potential for non-natural disasters and emergency conditions, such as fires, power plant disruptions, and mass panic situations. This awareness is the basis for schools to prepare SPAB planning as a preventive and mitigating step. This awareness is in line with the view that schools need to identify all potential risks, both natural and non-natural disasters, as the basis for the preparation of comprehensive mitigation strategies.⁹

In the planning stage, the school maps the physical condition of the school environment, including the structure of the building, the entrance and exit routes of the building, locations that can be used as emergency gathering points, and the condition of safety support facilities. This mapping of risks and infrastructure is an important step in SPAB planning because it serves as the basis for preparing evacuation procedures and improving the safety of the school environment. The mapping results show that several evacuation signs have been available, but they have not been installed evenly throughout the strategic area. This finding was noted as part of the need for SPAB development in the aspect of infrastructure. SPAB planning also considers the characteristics of elementary school students, especially related to age and psychological aspects. Therefore, the school designs SPAB activities that are educational, child-friendly, and do not cause excessive fear. Teachers are involved in providing input on appropriate learning methods so that disaster materials can be understood gradually by students. This approach is in line with research that states that disaster education in elementary school-age children must be delivered gradually and contextually so as not to cause trauma.¹⁰

In addition, SPAB planning includes a plan for cooperation with external parties who have competence in the field of disasters. This collaboration is designed to support the implementation of disaster education and simulation in accordance with safety standards. Parents of students are also involved in planning as part of the school community, especially in supporting extracurricular activities and strengthening safe behaviors in the family environment.¹¹

Implementation of the SPAB Program

The implementation of the Disaster Safe Education Unit (SPAB) Program at SDIT Al-Biruni Mandiri Makassar is realized through a series of structured activities that include disaster education, evacuation simulations, and self-rescue training. These activities are designed as part of

⁹ Miftahul Huda et al., "Sosialisasi Satuan Pendidikan Aman Bencana (SPAB) Dan Pemasangan Papan Jalur Evakuasi Di Lingkungan Sekolah MI Nurul Huda," *JIWAKERTA: Jurnal Ilmiah Wawasan Kuliah Kerja Nyata* 6, no. 1 (2025), <https://doi.org/10.32528/jiwakerta.v6i1.22636216>.

¹⁰ Liyana Mardova et al., "Sosialisasi Mitigasi Bencana Berbasis Edukasi Sains Bagi Siswa Sekolah Dasar Melalui Implementasi Hasil Kunjungan Ilmiah Ke Bmkg," *Jurnal Abdi Insani* 12, no. 8 (2025), <https://doi.org/10.29303/abdiinsani.v12i8.2712>.

¹¹ Rahmi Fadiah Nasution et al., "Peran Pendidikan Kesiapsiagaan Bencana Dalam Meningkatkan Kesadaran Pada Remaja," *Jurnal Bintang Pendidikan Indonesia* 3, no. 1 (2024), <https://doi.org/10.55606/jubpi.v3i1.3491>.

contextual learning that emphasizes *experiential learning*, so that students not only understand the concept of disaster theoretically, but are also able to practice self-rescue measures in emergency situations. This pattern of implementation is in line with the disaster learning approach that emphasizes experiential learning as an effective strategy to improve student preparedness.¹² This approach was chosen to adapt to the characteristics of elementary school students who tend to understand the material more easily through real experience.

Disaster education is the initial stage in the implementation of SPAB. At this stage, students are introduced to the basic concept of disaster, including the definition of disaster, types of disasters, and early signs of disasters. In addition, students are also given an understanding of the initial actions that need to be taken to protect themselves and others when in an emergency situation. The delivery of material is carried out interactively by utilizing audiovisual media, images, and educational games designed according to the level of development of students. This approach is in accordance with the results of research that the use of visual media and play methods can improve disaster understanding in elementary school students.¹³ This approach aims to make it easier for students to understand the concept of disaster while creating a fun learning atmosphere and not causing excessive fear.

Educational activities are carried out in an open area that has been prepared by the committee by considering the safety and comfort aspects of students. All students, accompanying teachers, and parent representatives occupied a spacious area under shady trees. Speakers from Human Initiative utilize the surrounding environment as part of the learning media, so that students can understand the concept of disaster risk in a real context. Based on the results of the researcher's observations, educational activities began with a basic introduction to the types of disasters, signs of disasters, and initial safety measures that can be taken. Presenters use a combination of interactive lecture methods, demonstrations, and educational games to adapt to the characteristics of elementary school students.

¹² Mulyati Sri Rahayu et al., "Edukasi Mitigasi Bencana Melalui Sosialisasi Kesiapsiagaan Bencana Gempa Bumi Bagi Siswa Sekolah Dasar," *Auxilium : Jurnal Pengabdian Kesehatan* 2, no. 2 (2024), <https://doi.org/10.29103/auxilium.v2i2.15989>.

¹³ Difa Tri Rahmadhani et al., "Analisis Dampak Dan Pengendalian Risiko Benacana Alam Terhadap Proses Pembelajaran Siswa Di Sekolah," *Jurnal Media Akademik (JMA)* 3, no. 12 (2025), <https://doi.org/10.62281/q0r89n85>.



Figure 1. Implementation of SPAB Education

After students gain a basic understanding of disasters, the implementation of SPAB is continued with evacuation simulation activities and *self-rescue* training. This evacuation simulation is considered an important method in building students' habits and preparedness to face emergency situations in a directed and controlled manner. At this stage, students are directed to practice directly evacuation procedures according to the predetermined emergency scenario. The scenario includes basic evacuation steps, such as how to move to a safe route, gather at emergency gathering points, and maintain order and safety during the evacuation process. This activity aims to familiarize students with dealing with emergency situations in a directed and controlled manner.

In the implementation of simulations and *self-rescue training*, teachers play the role of facilitators and companions who are in charge of directing, supervising, and ensuring the safety of students during the activity. Teachers also serve as a liaison between students and instructors from external partners who provide disaster technical guidance.¹⁴ The results of the observation show that the technical implementation of simulation and training is still highly dependent on the assistance of external partners who have special competence in the field of disasters. These findings are in line with research that states that internal capacity limitations are often an obstacle in the implementation of SPAB independently. This dependence shows that the internal capacity of schools in the technical implementation of SPAB still needs to be strengthened.

The implementation of SPAB shows a fairly high level of student participation and enthusiasm, especially when activities are carried out in the form of outdoor learning. Students seemed to actively follow directions, engage in educational games, and show curiosity about the disaster material presented. However, the observation results also show that some students, especially at the lower grade level, do not fully understand the seriousness of evacuation simulation activities. Some students still view simulation as a play activity and have not been able to distinguish between educational games and serious preparedness exercises.

¹⁴ Unjaya, "Kesiapsiagaan Bencana Di Sekolah."

The interactive learning method used by Human Initiative is also able to meet the learning needs of elementary school students who tend to get bored quickly and need a variety of activities. By combining visuals, audio, movement, and games, the educational process becomes more meaningful and encourages the active involvement of all students. In addition, the selection of educational locations outside the school reinforces the message that disaster threats do not only occur inside the building, but can appear anytime and anywhere, so students need to have more comprehensive preparedness. These findings also show that the implementation of SPAB at SDIT Al-Biruni does not only focus on knowledge transfer, but also on the formation of *life skills* based on disaster preparedness. Interactive activities in the outdoors also contribute to the development of social skills, quick decision-making skills, and students' psychological resilience.

This condition shows that the implementation of SPAB at SDIT Al-Biruni Mandiri Makassar still needs strengthening, especially through the repetition of activities and habituation on an ongoing basis. This habituation is necessary so that disaster preparedness values can be embedded consistently in student behavior. Thus, the implementation of SPAB does not only function as a momentary activity, but is part of a continuous learning process in building preparedness and safety for school residents.

Evaluation of the Implementation of the SPAB Program

The evaluation of the implementation of the Disaster Safe Education Unit (SPAB) Program at SDIT Al-Biruni Mandiri Makassar was carried out internally by the school after the entire series of activities were completed. Internal evaluation is the first step that schools generally take in assessing the effectiveness of disaster programs. This evaluation is part of the school's efforts to assess the extent to which SPAB activities have run in accordance with the plan that has been prepared and to identify strengths and weaknesses in its implementation.¹⁵ The evaluation process is carried out through joint reflection activities and direct observation of the course of activities and student responses during the program.

The focus of the evaluation is directed at several main aspects, namely the suitability between the planning and implementation of activities, the level of student participation and involvement, and the effectiveness of the method of delivering disaster materials. These findings are in line with research that states that the SPAB program contributes positively to increasing disaster literacy among elementary school students. Evaluation of the suitability of implementation with planning is carried out by observing whether all stages of activities that have been designed can be carried out according to the schedule and goals set. In addition, the evaluation also pays

¹⁵ Ike Fitri Samsiyah et al., "Studi Penilaian Satuan Pendidikan Aman Bencana (SPAB) Sekolah Berbasis Keagamaan Di Kabupaten Cilacap."

attention to the smooth implementation of activities, including time management, coordination between companions, and the readiness of supporting facilities during the activity.

The results of the evaluation show that in general, the implementation of SPAB has gone according to plan and is able to provide a meaningful learning experience for students. SPAB activities are considered to be able to increase students' basic knowledge about disasters, especially related to the types of disasters, the first steps of self-rescue, and evacuation procedures in emergency situations. Students also show an early understanding of the importance of being calm and following directions when facing emergencies. This finding can be seen from the students' ability to follow the flow of the evacuation simulation and compliance with the instructions given during the activity.

However, the results of the evaluation also show that there is a variation in the level of student understanding. Student understanding is not evenly distributed, especially in low-grade students who still need intensive assistance. Some students at this level are not fully able to distinguish between simulation as a preparedness exercise and play activities. This condition shows that the delivery method and form of activities need to be adjusted to the level of development of students so that disaster learning goals can be achieved optimally. The evaluation of the implementation of SPAB also revealed that schools do not have formal evaluation instruments that are systematically documented. Schools have not prepared written evaluation tools, such as goal achievement assessment sheets, activity evaluation reports, or standard operating procedures (SOPs) for disasters. As a result, the evaluation process is still reflective and descriptive, and has not produced well-structured and documented follow-up recommendations.

The absence of a systematic evaluation instrument causes the follow-up of evaluation results that have not been formulated in a planned and sustainable manner. The improvement efforts carried out still depend on the initiative of the school and have not been integrated in the next SPAB planning cycle. These findings show that even though the evaluation has been carried out, strengthening the evaluation planning aspect and documentation of evaluation results is still an important need so that the implementation of SPAB can continue to be improved and developed in a sustainable manner.

Supporting and Inhibiting Factors for the Implementation of SPAB

The results of the study show that there are a number of supporting factors that affect the implementation of the SPAB Program at SDIT Al-Biruni Mandiri Makassar. The main supporting factor is the commitment of school leaders in supporting the implementation of disaster preparedness programs. This commitment is reflected in the school's policy that provides space for the implementation of SPAB activities as well as support for the involvement of various parties.

In addition, the support of teachers and education staff is an important factor in the smooth implementation of SPAB. Teachers play an active role in accompanying students during activities and helping to adjust the material to the characteristics of students. The support of students' parents is also a supporting factor, especially in granting permits for extracurricular activities and strengthening safe behavior in the family environment. The existence of external partners who have competence in the field of disaster also strengthens the quality of SPAB implementation, especially in the technical aspects of education and simulation.

On the other hand, this study also identified several inhibiting factors in the implementation of SPAB. Limited disaster facilities and infrastructure, such as uneven evacuation signs and safety facilities, are obstacles in creating a completely safe school environment. In addition, the limited capacity of teachers in the field of disasters causes schools to still depend on external partners in the implementation of technical activities. Another inhibiting factor is the lack of comprehensive integration of SPAB in the school curriculum and culture. As a result, the implementation of SPAB is still incidental and has not yet become part of the learning routine. This condition shows that the implementation of SPAB requires continuous strengthening so that it can develop into a culture of preparedness that is inherent in daily school life.

Discussion

The findings of the study show that the planning and implementation of the Disaster Safe Education Unit (SPAB) Program at SDIT Al-Biruni Mandiri Makassar has led to the fulfillment of the basic principles of SPAB as mandated in Permendikbud Number 33 of 2019, including participatory, preventive, and sustainable principles. The participatory principle is reflected in the involvement of various school components in developing preparedness plans, while the preventive and sustainability principles are reflected in the school's efforts to identify risks and integrate disaster learning into daily school practices. This is in line with the national policy direction which emphasizes the importance of disaster preparedness as part of comprehensive education in education units.

SPAB planning carried out through risk identification and mapping of potential hazards shows conformity with the concept of *school-based disaster risk reduction* which emphasizes the importance of the local context and the involvement of all school residents in the planning process.¹⁶ As recent studies have shown, early risk recognition and integration of disaster education into learning activities can improve students' understanding and preparedness, even in areas that are not directly prone to major disasters.¹⁷ The involvement of teachers in SPAB planning shows awareness

¹⁶ Rendra Zainal Maliki et al., "Pendampingan Pemetaan Partisipatif Sekolah Siaga Bencana," *Surya Abdimas* 7, no. 1 (2023), <https://doi.org/10.37729/abdimas.v7i1.2322>.

¹⁷ Rahmi Fadiah Nasution et al., "Peran Pendidikan Kesiapsiagaan Bencana Dalam Meningkatkan Kesadaran Pada Remaja."

of the strategic role of educators as agents of change in shaping safe student behavior. The role of teachers is not only as a conveyor of information, but also as a facilitator of a contextual and sustainable learning process.¹⁸ However, the school's dependence on external partners in technical implementation shows that the internal capacity of teachers in the field of disaster still needs to be strengthened. This is consistent with recent findings showing that teacher-specific training contributes significantly to improving overall school preparedness, including teachers' ability to design and deliver disaster materials effectively.

The limited facilities and infrastructure of disasters in schools, such as the installation of uneven evacuation signs, are indicators of the gap between planning and physical readiness of schools. In the context of disaster risk-based education, the physical aspects of the school environment are an important foundation to ensure the safety and resilience of schools against disaster threats.¹⁹ Without adequate infrastructure support, the knowledge and skills that students and teachers possess have the potential to not be optimally realized when an emergency occurs.

The finding that some students still view the evacuation simulation as a play activity shows that the formation of a culture of preparedness is not enough to be achieved through momentary activities, but requires systematic repetition and habituation.²⁰ Recent studies emphasize that habituation, strengthening the context of practice, and integrating preparedness values in various school activities can strengthen the internalization of disaster preparedness competencies in students.²¹ This is important considering that effective preparedness involves not only students' cognitive knowledge, but also affective and psychomotor abilities in responding to disaster threats.

The evaluation of the implementation of SPAB carried out internally shows that the school is aware of the importance of the evaluation cycle in order to improve the program. This internal evaluation is part of the organizational learning mechanism that is needed so that the program can continue to be developed according to the evaluation findings. However, the evaluation carried out is still reflective and has not been supported by systematic formal instruments, so follow-up recommendations have not been formulated in a planned manner. This condition shows the need for the development of a stronger and documented preparedness-indicator-based evaluation instrument to measure the effectiveness of program implementation comprehensively.

¹⁸ Mardova et al., "Sosialisasi Mitigasi Bencana Berbasis Edukasi Sains Bagi Siswa Sekolah Dasar Melalui Implementasi Hasil Kunjungan Ilmiah Ke Bmkg."

¹⁹ Susilawati Susilawati et al., "Identifikasi Sarana Dan Prasarana SMP Dharma Pancasila Medan Dalam Mitigasi Kebencanaan," *AURELIA: Jurnal Penelitian Dan Pengabdian Masyarakat Indonesia* 5, no. 1 (2026), <https://doi.org/10.57235/aurelia.v5i1.7789>.

²⁰ Ike Fitri Samsiyah et al., "Studi Penilaian Satuan Pendidikan Aman Bencana (SPAB) Sekolah Berbasis Keagamaan Di Kabupaten Cilacap."

²¹ Mukhlis Mustofa, "Pendidikan Kebencanaan Berbasis Kearifan Lokal Dalam Penguatan Karakter Siapsiaga Bencana," *Geodika: Jurnal Kajian Ilmu Dan Pendidikan Geografi* 4, no. 2 (2020), <https://doi.org/10.29408/geodika.v4i2.2776>.

Thus, although the implementation of SPAB at SDIT Al-Biruni Mandiri Makassar has shown a positive direction and is in line with national policies, there is an urgent need to strengthen aspects of continuous evaluation, increase teacher capacity, and fulfill disaster infrastructure. This effort is important so that SPAB is not only a series of program activities, but develops into a culture of preparedness inherent in the school education system in a sustainable manner.

CONCLUSION

This study shows that the Disaster Safe Education Unit (SPAB) Program at SDIT Al-Biruni Mandiri Makassar has become an important starting point in efforts to build disaster preparedness in basic education units. SPAB is not only understood as a technical disaster mitigation activity, but as an educational process oriented towards forming awareness, attitudes, and safe behaviors of all school residents. This interpretation emphasizes that disaster preparedness in schools is an integral part of efforts to protect students as well as strengthen the function of education as a safe and sustainable space.

Participatory planning and implementation of SPAB shows that the involvement of various elements of schools has a strategic role in building collective awareness of disaster risk. However, this study also means that the success of SPAB is not only determined by the existence of educational and simulation activities, but also by the extent to which the program is able to be internalized into the system, culture, and daily educational practices. Without sustainable integration, SPAB has the potential to cease as an incidental program that has not fully established a culture of preparedness.

The results of this study provide the meaning that strengthening the internal capacity of schools, especially teachers' competence in the field of disasters, is the main prerequisite for the sustainability of SPAB. Reliance on external partners can be an effective initial strategy, but it needs to be balanced with the development of teachers' abilities so that schools have independence in implementing and developing disaster preparedness programs. In addition, the readiness of infrastructure facilities and systematically documented evaluation systems are important elements in bridging the gap between planning and practice in the field.

Based on the findings and discussion, this study has development prospects for strengthening the SPAB model based on school culture, namely SPAB which is integrated into the curriculum, daily habits, and school management. Applicatively, the results of this study can be a reference for other elementary schools, especially those in areas with low to moderate disaster vulnerability, to develop SPAB as a preventive and educational effort. In the future, further research can be directed towards the development of a more comprehensive SPAB evaluation instrument,

measuring the long-term impact of SPAB on student preparedness behavior, and comparative studies between schools to strengthen contextual and sustainable SPAB implementation models.

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