

Management integration risk disaster in early childhood education governance: A case study unit standby disasters

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Abstract

Purpose— This study aims to describe the implementation of character education through a disaster preparedness program at PAUD Kasih Ibu as a comprehensive safe school.

Design/methods/approach— The research employed a qualitative approach using a case study method. Data were collected through in-depth interviews, observations, and document analysis.

Findings— The implementation of character education through the disaster preparedness program at PAUD Kasih Ibu was based on three pillars of a comprehensive disaster-safe school and integrated Disaster Risk Reduction (DRR) education into the school curriculum as a strategy to strengthen character education. The findings reveal that disaster preparedness activities provided opportunities for the development of five character values, namely religiosity, independence, cooperation, nationalism, and integrity.

Research implications/limitations— This study contributes to early childhood education by providing insights into the implementation of disaster preparedness programs as a contextual approach to integrating character education in early childhood settings.

Practical implications— Early childhood education institutions can integrate disaster risk management into institutional governance through safe facilities, clear emergency procedures, regular simulations, and age-appropriate disaster education. Collaboration among schools, parents, communities, and disaster management agencies is essential to strengthen preparedness and support children's character development. These findings provide practical guidance for implementing SPAB programs while considering local disaster risks, institutional capacity, and available resources.

Originality/value— Although disaster preparedness programs in educational settings have received increasing attention, studies examining the integration of disaster risk management into early childhood education governance remain limited, particularly in developing comprehensive and character-based disaster preparedness systems.

Keywords: character education, disaster preparedness, early childhood education unit management

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Introduction

Disasters remain a major challenge to the sustainability and safety of educational services, particularly for early childhood education institutions. Children in early childhood are considered one of the most vulnerable groups during disaster situations due to their limited ability to recognize risks, respond independently, and protect themselves during emergencies. In Indonesia, disaster events have increased in frequency and have significantly affected various sectors, including education (Amir, 2016; H. Wulandari & Salsabila, 2023). Data from the National Disaster Management Agency (BNPB) indicate that during the 2015–2019 period, natural and non-natural disasters affected 62,687 educational facilities and more than 12 million students (Wulandari et al., 2024). These conditions highlight the urgent need to strengthen disaster preparedness and risk management within educational institutions, particularly at the early childhood education level.

Educational institutions are not only responsible for providing learning services but also have an important role in creating safe and resilient learning environments (Hariati & Utami, 2025; Nisa', 2021). Disaster impacts on children may extend beyond physical safety issues and can influence psychological conditions, learning continuity, and children's social development. Therefore, disaster risk reduction (DRR) education needs to be introduced from an early age through systematic educational programs that integrate knowledge, skills, and preparedness behaviours (Khambali et al., 2022). Schools can serve as strategic environments for developing disaster awareness because children spend a significant amount of time within educational settings and can acquire safety knowledge through structured learning experiences and simulations (Dewi, 2022).

The implementation of disaster preparedness programs in educational institutions has been promoted through the Safe School Program, including the Disaster Preparedness School Unit (*Satuan Pendidikan Aman Bencana/SPAB*). The SPAB framework emphasizes three main components: safe school facilities, disaster management in schools, and disaster prevention and risk reduction education (Winugroho et al., 2021). Through these components, disaster preparedness is not limited to emergency response but also includes prevention, mitigation, and recovery efforts. In the context of early childhood education, disaster preparedness programs can also become a medium for developing children's character values, such as responsibility, independence, cooperation, and awareness of their surrounding environment.

Internationally, the SPAB framework closely parallels the Comprehensive School Safety Framework 2022–2030, which is likewise built on three pillars: safe learning facilities, school disaster management, and risk reduction and resilience education (Global Alliance for Disaster Risk Reduction and Resilience in the Education Sector (Global Alliance for Disaster Risk Reduction and Resilience in the Education Sector., 2022). Both are consistent with the Sendai Framework for Disaster Risk Reduction 2015–2030, which calls for disaster risk knowledge to be integrated into education (United Nations Office for Disaster Risk Reduction, 2015). Research from other countries shows that school-based disaster education can improve children's knowledge of risks and protective actions, yet most evaluations rely on knowledge measures, have methodological limitations, and provide limited empirical evidence on how programs support children's self-protective capacities and household preparedness (Johnson et al., 2014; Ronan & Johnston, 2005). Placing the case of Kasih Ibu Early Childhood Education Centre (*Pendidikan Anak Usia Dini/PAUD*) within this global discussion clarifies its relevance beyond Indonesia.

Previous studies have examined the implementation of disaster education in early childhood education settings. Nurfadilah and Darsono (2021) found that disaster education in flood-prone early childhood institutions in Central Jakarta had been implemented through

independent approaches; however, curriculum integration and coordination with relevant institutions remained insufficient. Similarly, Tirtayani and Jampel (2018) reported that disaster preparedness materials had not been optimally integrated into early childhood education curricula, resulting in limited disaster knowledge among young children. Meanwhile, Mustofa and Handini (2020) demonstrated that disaster education based on local wisdom could help strengthen children's disaster-preparedness character.

Although previous studies have provided important insights into disaster education for young children, most studies have focused on disaster learning materials, curriculum implementation, or specific disaster awareness activities (Atmojo, 2020). Limited studies have explored how disaster risk management is integrated into the overall governance of early childhood education institutions through a comprehensive preparedness framework (R. S. Dewi, 2019). In particular, the relationship among SPAB implementation, institutional disaster management, and character education development in early childhood settings remains underexplored (Anindhita et al., 2024). Therefore, further investigation is needed to understand how disaster preparedness programs can be managed systematically within early childhood education governance (Efastri et al., 2024; Lestari et al., 2026; Yadnya et al., 2020). Therefore, this study extends previous research by examining disaster preparedness not only as a learning activity but also as an integrated governance mechanism involving institutional management, curriculum development, and stakeholder collaboration in early childhood education. This perspective provides a broader understanding of how disaster risk management can be embedded within early childhood education systems through the SPAB framework

PAUD Kasih Ibu, located in Babelan District, Bekasi Regency, represents an important case for studying disaster preparedness implementation because the area is vulnerable to several hazards, including flooding and fire due to its geographical conditions and population density. Since the 2017/2018 academic year, PAUD Kasih Ibu has integrated disaster risk reduction education into its school programs by implementing disaster preparedness activities. The school has developed disaster management practices involving educators, educational staff, students, parents, and surrounding communities. Therefore, this study aims to describe the implementation of disaster preparedness programs at PAUD Kasih Ibu as a comprehensive safe school model. Specifically, this study examines how disaster risk reduction education is integrated into early childhood education governance and how its implementation supports the development of character education through the three pillars of the SPAB framework.

Methods

This study employed a qualitative case study design to explore the implementation of disaster preparedness management in early childhood education governance (Hanurawan, 2016). This approach was selected because the study aimed to understand the processes, practices, and experiences of stakeholders involved in implementing the Disaster Preparedness School Unit (SPAB) program, rather than to measure program effectiveness quantitatively. The research was conducted at PAUD Kasih Ibu in Babelan District, Bekasi Regency, Indonesia, which was selected because the institution had integrated disaster preparedness activities into its school programs.

The participants were selected using purposive sampling based on their involvement and knowledge of disaster preparedness implementation. The participants included the head of the PAUD institution, teachers, educational staff, school committee members, and other relevant stakeholders involved in supporting the SPAB program. A total of 25 participants were involved in this study (3 teachers, 2 staff, 20 parents). Data were collected through semi-structured interviews, direct observations, and document analysis

Interviews explored disaster preparedness management, curriculum integration, stakeholder involvement, and implementation challenges. Observations focused on school facilities, evacuation procedures, simulations, and disaster-related learning activities, while document analysis examined relevant materials such as SOPs, curriculum documents, and disaster preparedness plans.

The data were analyzed using qualitative analysis procedures consisting of data reduction, data display, and conclusion drawing. The analysis was conducted by identifying themes related to disaster preparedness implementation and character education integration. The SPAB framework, consisting of three pillars: safe school facilities, disaster management in schools, and disaster prevention and risk reduction education, was used as the conceptual framework to guide data interpretation. Data credibility was ensured through triangulation by comparing information obtained from interviews, observations, and document analysis. This process was conducted to ensure consistency and strengthen the validity of the findings. Ethical considerations were addressed by obtaining institutional approval and ensuring voluntary participation, confidentiality, and the protection of participants' personal information. Data collected were used solely for research purposes, and activities involving children were conducted under the supervision of teachers and the institution.

Result

Implementation of Disaster Preparedness School Unit (SPAB) at PAUD Kasih Ibu

The implementation of the Disaster Preparedness School Unit (SPAB) at PAUD Kasih Ibu illustrates that disaster preparedness in early childhood education requires a comprehensive governance approach that integrates physical safety, institutional management, and educational processes. The findings indicate that disaster preparedness is not merely an emergency response mechanism but also a continuous educational process that builds awareness, responsibility, and adaptive capacity among school communities. The findings show that the implementation of the Disaster Preparedness School Unit (SPAB) at PAUD Kasih Ibu was conducted through three main pillars: safe school facilities, disaster management in schools, and disaster prevention and risk reduction education. Figure 1 presents the SPAB management concept developed by PAUD Kasih Ibu, which organizes the school's preparedness efforts into these three interconnected pillars.

Figure 1.

SPAB Management Concept at PAUD Kasih Ibu Bekasi



Pillar 1 Facilities Safe Schools

As Figure 1 shows, SPAB at PAUD Kasih Ibu rests on three pillars: safe school facilities, disaster management in schools, and disaster prevention and risk reduction education. The first finding relates to the development of safe school facilities. PAUD Kasih Ibu developed disaster preparedness facilities by arranging the school environment to support evacuation processes. The school prepared disaster risk maps, evacuation routes, gathering points, and classroom arrangements designed to improve children's safety during emergency situations.

Figure 2.

School evacuation routes to the assembly point.

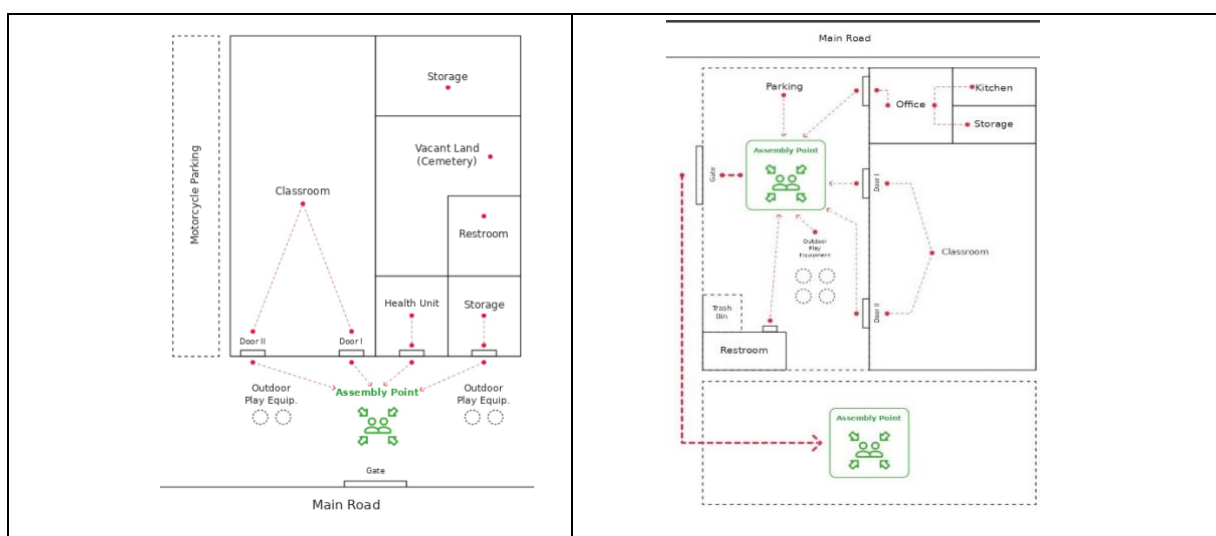


Figure 2 illustrates how the first pillar was translated into spatial planning. Each classroom has two exits (Door I and Door II) that lead directly toward an assembly point, and the routes from the other rooms converge on the same point, which keeps the evacuation destination simple and easy to recognize. These data show how the safe-facilities pillar was operationalized: evacuation planning is built into the physical layout of the school, not only into written procedures. In both panels, dashed arrows connect each classroom door and the other rooms to an assembly point, and the right panel also marks a second assembly point outside the school compound that is reached through the gate. The classrooms were arranged with two doors that open outward to provide alternative evacuation access during disasters such as earthquakes, floods, and fires. The school also designed evacuation routes equipped with clear signs leading to gathering points that could be easily recognized by school members. In addition, classroom arrangements considered children's safety needs.

Tables and chairs were selected from strong materials that could provide temporary protection during earthquakes. Electrical outlets were positioned at teacher-level height to facilitate emergency electricity control, while shelves and wall decorations were secured to reduce the risk of falling objects. Having two exits allows children to choose the nearest door when an earthquake, flood, or fire occurs.

Besides utilization facility school, design and layout supportive class standby disaster includes a) design class for position tables and chairs pay attention room comfortable movement for children; b) tables and chairs chosen from strong material so that it can become place take shelter when happen earthquake, with method enter to underpass table; c) power outlet tall as tall as the teacher approximately 1.5 M high to make it easier turn off switch electricity at the time happen fire; d) placement rack toys and decorations wall in room class pasted strong use rope attached wire to wall room.

The first pillar of SPAB implementation at PAUD Kasih Ibu is the development of safe school facilities. The findings show that the school has attempted to create a safer learning environment through evacuation routes, gathering points, classroom arrangements, and safety-supporting facilities. These efforts demonstrate that physical infrastructure plays an important role in reducing children's vulnerability during disasters. However, the presence of safety facilities alone does not automatically guarantee disaster preparedness. Facilities must be accompanied by knowledge, routine practice, and understanding among school members regarding their functions during emergency situations. Therefore, the implementation of safe facilities should be understood as part of a broader safety culture rather than merely the fulfillment of physical requirements.

Pillar 2 Disaster Management and Curriculum Integration

The second finding concerns disaster management integration into school governance. PAUD Kasih Ibu established a disaster preparedness team consisting of teachers, educational staff, and school committee members. The team was responsible for preparedness activities before, during, and after disasters. The school also integrated disaster preparedness into the curriculum through semester learning plans, weekly learning plans, and daily learning implementation plans. Disaster preparedness activities were supported by Standard Operational Procedures (SOPs) for flood management, fire prevention, and earthquake response.

The school conducted disaster simulations periodically, including evacuation practices assisted by external facilitators. These activities were designed to improve the readiness of school members in responding to potential disaster situations. The school's disaster-preparedness learning materials, organized by developmental aspect, together with the annual

activity plan that schedules earthquake simulations. It was evidenced in their annual activity program and disaster-preparedness curriculum and daily lesson plan (RPPH) integrating disaster preparedness. Simulations were implemented twice per semester with a facilitator from *Dompét Dhuafa*. A daily lesson plan (RPPH) in which disaster content, including naming natural disasters, storytelling, an earthquake song, and a simulation, is built into the day's activities.

The school also developed SOPs for floods, fire, and earthquakes, which are summarized in Tables 1 to 3. Tables 1 to 3 present the SOPs for flood, fire, and earthquake in a who–what–where–when–information format. All three follow the same sequence: an early warning, coordination by the chairperson of the organizer, evacuation of the children to the assembly point, a check of all rooms, and contact with parents or guardians for pick-up. They differ according to the hazard. The flood SOP begins with monitoring the water level and sets a 10-minute target for evacuation; the fire SOP adds cutting the electricity, using the available extinguishing tools, calling the fire department, and securing important documents; and the earthquake SOP adds taking shelter under tables before evacuation, with a 5-minute target.

Table 1.

SOP for Handling Flood Disasters

Who	What	Where	When	Information
field warning early	monitoring water conditions	in the school environment	when the water starts to rise	can be sent via cell phone
if the water starts to rise, then chairman organizer	coordination with teachers	anywhere	5 minutes	can be sent via cell phone
coordinator and field warning early	sounding sign warning early	at school	when the water starts to rise	bamboo gong is struck fast and long / siren/bell
field evacuation	evacuate children to point gather	buildings a and b	10 minutes	children in the classroom, attendance and accompaniment going to point gather
	check all over the room	buildings a and b	10 minutes	ensure there are no children left behind in the classroom
field help	contact student guardian	environment around		via hp
chairman organizer	contact inhabitant around	anywhere		via hp
student guardian	pick up his son	environment school		condition with guardian class

Table 2.

SOP for Handling Fires

Who	What	Where	When	Information
teacher	inform children and residents around when there is a fire symptom	in the school environment	smell of smoke	ring the bell/siren
field evacuation	find out the source of the fire and its causes	anywhere	5 minutes	can via cell phone

	turn off electricity and current electricity through the fuse put out the fire with existing tools			
chairman organizer	coordination with teachers and field evacuation when the fire is big enough, contact the fire department	at school	smell of smoke	via hp
field evacuation	save document important evacuate child to the gathering point	at school	5 minutes	
field help	check all over the room contact student guardian	classroom environment school	5 minutes	via hp
student guardian	pick up his son	environment school		coordination with the teacher

Table 3.

SOP for Handling Earthquakes

Who	What	Where	When	Information
teacher	inform children when there is an earthquake; there are vibrations and objects around that move. the teacher invites children to take shelter under a table.	in the school environment	moment felt vibration	ring the bell/ siren
teacher	inform the chairman/organizer	anywhere		can be done via cell phone
chairman organizer	coordination with teachers and field evacuation	at school	moment felt vibration	
field evacuation	evacuate children to the gathering point	at school	5 minutes	
field help	check all over the room contact student guardian	classroom environment school	5 minutes	via hp
student guardian	pick up his son	environment school		coordination with guardian class

In addition to the SOP, PAUD Kasih Ibu applied learning strategies suited to young children, namely storytelling, question-and-answer sessions, direct evacuation simulations, and songs. Table 4 presents the lyrics of the song "*Siaga Gempa*" (Earthquake Alert), which uses the melodies of two children's songs, "*Pelangi*" and "*Becak*".

Table 4.

Lyrics of the Song "Siaga Gempa" (Earthquake Alert)

Using Song Tone " Rainbow "	Using song notes " Pedicab "
If there is an earthquake, protect your head	Living in Indonesia
If there is an earthquake, stay away from glass	Potential happen Earthquake
If there is an earthquake, enter the underpass	There are also floods
table	In the Village and in the City
If there is an earthquake, run to an open place	Let us be alert, to be safe, all
	Quickly ... quickly ... understand the signs
	If earthquake hit
	Protect your head
	Stay away from glass
	Come under the table in the underpass
	Moment earthquake subside

The lyrics in Table 4 condense the key earthquake actions, protecting the head, staying away from glass, taking shelter under a table, and running to an open space once the shaking subsides, into short, repeated phrases set to familiar tunes. The song thus reinforces the shelter-under-the-table step in the earthquake SOP (Table 3) in a form that young children can remember and rehearse.

The findings further reveal that classroom arrangements and evacuation planning at PAUD Kasih Ibu were designed by considering children's characteristics and safety needs. This aspect is particularly important because early childhood learners have different levels of cognitive and physical ability compared with older students. Therefore, disaster preparedness strategies for early childhood education should use approaches that are simple, contextual, and easily understood by children.

Pillar 3 Disaster Prevention and Risk Reduction Education

The third finding relates to disaster prevention and risk reduction education. Disaster education at PAUD Kasih Ibu was implemented through storytelling, question-and-answer activities, evacuation simulations, and disaster preparedness songs (Table 4). Teachers and educational staff played an important role as key actors in delivering disaster preparedness education. Evacuation simulations for earthquakes, floods, and fires were conducted regularly to familiarize children and school members with emergency responses. The school also integrated disaster risk reduction materials through the "Doctor *Cilik*" activity, in which children were introduced to disaster scenarios and encouraged to help others. These activities aimed to introduce disaster awareness through child-friendly learning approaches. Because of that, teachers and staff need to be equipped with the knowledge and skills needed to implement the draft school disaster safety plan. Practice evacuation simulations and countermeasures for disasters such as earthquakes, floods, and fires, implemented sustainably once every three months. The goal is for residents and school to have skills, be ready and alert in disaster countermeasures, and reduce panic when disasters come.

Integration of PRB material in "Doctor" activity *Cilik* that is, child given skills and image about How condition moment happen earthquake so that child own concern for help fellow, then school carry out campaign routine know message key practical safety. The results achieved in the implementation of SPAB at PAUD Kasih Ibu in implanting character education among them are:

1. PAUD Kasih Ibu becomes a school ready for disaster standby;
2. Growth marks character for students. Children can understand and believe in the existence of Almighty God through his creation. Next, child used to behave disciplined, independent, caring, capable of respect and tolerance to others, able to adapt to themselves, responsibility and able to recognise the environment;
3. Intertwined cooperation between schools, committee schools and service education in create a school standby disaster;
4. Residents of the school understand the importance of self-safety so that the school can weave cooperation with the Bumiputera insurance company for accident insurance as a form of protection for children.

There are two main impacts felt in implementing disaster preparedness at Kasih Ibu PAUD. First, motivation for children to follow the learning process on disaster preparedness increased. This is because the strategy used in the learning process is very interesting, so the

level of achievement in religious and moral values and social development of children increases. Second, public knowledge about disaster preparedness programs increased, so awareness arose to be involved in the implementation of disaster preparedness programs. Third, parents' awareness of the importance of safety is increased, so PAUD initiates cooperation with the Bumiputera insurance company. Fourth, habituation actions educate participants in hygiene and flood prevention by putting trash in its place and arranging a safe and secure learning environment to protect participants.

Parents were also involved in the school's preparedness activities. Figure 5 shows parents of students taking part in first-aid training for the initial moments after a disaster. This illustrates the role of families in the school's preparedness system and is consistent with the increased parental awareness reported above.

Figure 5.

Parents' participation in first-aid training for the initial moments after a disaster.



Character Values Identified Through Disaster Preparedness Activities

The findings indicate that disaster preparedness activities were associated with the emergence of several character values among children. These values included religiosity, independence, cooperation, nationalism, and integrity. Children participated in activities that encouraged discipline, responsibility, cooperation, environmental awareness, and respect toward others. The implementation of disaster preparedness also encouraged collaboration between schools, parents, committees, and surrounding communities. These values are summarized in Table 5 and interpreted in the Discussion.

Challenges and Sustainability Efforts in Disaster Preparedness Programs Implementation

In implementation of preparedness programs disaster, there are several obstacles that can be hinder optimization implementation of the program according to with planning that has been made. The obstacles faced by PAUD Kasih Ibu are lack of understanding and knowledge from public around about necessary preparedness implanted since early, facilities inadequate schools support in implementation of programs such as construction less buildings fulfil standard security, as well as facilities lack of safety complete and optimal equipment standby disaster not yet in accordance with standard standby disasters and lack of supporting funds for maximize socialization standby disaster to public more wide. Constraint the overcome with method among others, implementing standby teacher training disaster cooperation with Dompot Dhuafa, maximizing available facilities in accordance with school SOP standby disasters, for example nailing cupboard with wall, make tool equipment school standby disaster with simple tool as well as carry out socialization countermeasures disasters in every activity routine school and collaboration with the Bekasi Regency Education Office.

Success in disaster preparedness and PRB is influenced by internal and external factors, which include disaster policy countermeasures, motivation, and creativity from teachers and principals and PAUD organizers. Plus, system support comes from parents, the community around schools, and facilitators from the Bekasi Regency Education Office. In the future, there will be plan development for create a school as a disaster preparedness model, namely:

1. Establishing sustainable cooperation with *Dompot Dhuafa* in mentoring training for teachers and staff education.
2. Establishing a partnership with BPBD to give direction and coaching for schools to implement the program that has been entered into the curriculum operationally. BPBD can, in a way, periodically visit PAUD Kasih Ibu to provide knowledge about disasters and how to overcome them.
3. Strengthening the framework and work structure is done by providing buildings that meet standard safety design and room layout requirements, as well as by supporting adequate facilities and infrastructure, with adequate funds, involving parents, participants, education, the surrounding society, as well as local village devices.

Discussion

Disaster Preparedness as an Integrated Governance Approach in Early Childhood

The findings demonstrate that disaster preparedness at PAUD Kasih Ibu is not limited to emergency response activities but represents an integrated governance approach involving infrastructure, institutional management, curriculum integration, and stakeholder collaboration. This finding supports the Disaster Preparedness School Unit (SPAB) framework, which emphasizes three interconnected components: safe school facilities, disaster management, and disaster prevention and risk reduction education (Kementerian Pendidikan, 2022) . The implementation of SPAB indicates that disaster preparedness in early childhood education requires a holistic approach because children have limited capacity to independently recognize and respond to disaster risks. Therefore, schools function not only as learning environments but also as spaces for developing safety awareness and resilience from an early age.

Table 5 synthesizes the main findings for each SPAB component, the data on which they are based (Figures 1 to 5 and Tables 1 to 4), and the implications discussed below. Reading the table across its rows shows that the findings are most firmly grounded for the process dimensions of SPAB, namely facilities, SOPs, curriculum integration, and stakeholder participation, whereas the character-education findings rest on qualitative descriptions and are therefore interpreted as potential contributions rather than measured effects.

Table 5.

Summary of Key Findings, Supporting Data, and Implications

SPAB component	Key finding	Supporting data	Implication
Safe school facilities (Pillar 1)	Classrooms with two outward-opening doors, marked evacuation routes and assembly points, sturdy tables for shelter, electrical outlets at teacher height, and secured shelves and decorations	Figures 1–2	Physical design reduces children's exposure to risk, but it must be accompanied by routine practice to become part of a school safety culture

Disaster management in schools (Pillar 2)	A preparedness team; preparedness integrated into semester, weekly, and daily plans; SOPs for flood, fire, and earthquake; periodic simulations with an external facilitator	Figures 3–4; Tables 1–3	Responsibility moves from individual teachers to the institution, and clear roles and time targets structure the emergency response
Disaster prevention and risk reduction education (Pillar 3)	Storytelling, question-and-answer, songs, evacuation simulations, the "Doctor Cilik" activity, and first-aid training for parents	Table 4; Figure 5	Child-friendly, experiential methods embed disaster risk reduction in existing learning and extend it to families
Character education	Disaster activities offered opportunities to practice religiosity, independence, cooperation, nationalism, and integrity	Qualitative results (interviews, observations, documents)	Evidence of a potential contribution to character development, not of program effectiveness
Challenges and sustainability	Limited facilities, limited public understanding, and funding constraints; partnerships with Dompet Dhuafa and the Education Office, and planned cooperation with BPBD	Challenges and sustainability subsection	Sustained support from government and the community is needed beyond the school's own initiative

Safe Facilities as Part of School Safety Culture

Children have the right to a safe and sustainable life and to obtain quality and sustainable education services. However, in matters of fulfilment, they are often threatened by various dangers; one of them originates from the potential of nature to cause disasters, in various forms, big or small. Disaster incidents that occur can impact children in terms of safety as well as the sustainability of children's education. Although humans are not capable of preventing disasters, they can minimise them through risk assessment, careful planning, physical and environmental protection, and improved preparedness.

Schools have a role in disaster prevention through an educational approach, which can reach a wider range of targets and be introduced early to participants (Suarmika & Utama, 2017). This finding supports the view that disaster risk reduction (DRR) in educational institutions should be implemented through a combination of structural and non-structural approaches, including safe infrastructure, institutional policies, and disaster education programs (Kementerian Pendidikan, 2022).

Institutional Management Strengthens Sustainability of Disaster Preparedness

The establishment of a disaster preparedness team demonstrates that disaster management at PAUD Kasih Ibu has developed from individual responsibility into collective institutional responsibility. Previous studies have identified that disaster education implementation in early childhood settings is often constrained by limited coordination and institutional support (Nurfadilah and Darsono, 2021). In this context, PAUD Kasih Ibu demonstrates that stakeholder involvement can strengthen disaster preparedness implementation by distributing roles among teachers, parents, school committees, and external institutions.

Disaster Education as a Contextual Learning Strategy

Disaster Risk Disaster (PRB) is a long-term effort integrated into the framework development of sustainability, utilising knowledge and innovation to grow a culture of safety and preparedness throughout the education unit. PRB is positioned as a collective, interactive

learning process (Nuraeni, 2021) involving the public as well as various institution-related stakeholders. Moreover, PRB plays a strategic role in building a culture that is ready and responsive in facing various potential disaster threats (Kementerian Pendidikan, 2022).

Findings study mention that at PAUD Kasih Ibu already apply education and training disaster to child educators and parents, so that children and parents child can ready face condition emergency. Counselling for parents is done to form synergy with the school related to perceptions of handling disasters, as well as skills in organising disaster countermeasures. activities are done well in situations where no disaster happens, and also in situations where there is potential for disaster for child students and parents. Activities are supported by facilities and management schools that can arrange walking activities and deliver good material so that it can be understood by children and parents. This is in accordance with Constitution No. 24 of 2007.

The use of storytelling, songs, simulations, and interactive activities shows that disaster education can be adapted to early childhood learning characteristics. Children at this developmental stage require concrete and experiential learning rather than abstract explanations. This finding supports previous studies stating that disaster education for young children should use contextual approaches that allow children to understand risks and practice appropriate responses .

These approaches reflect the characteristics of early childhood learning, where children acquire knowledge more effectively through meaningful and experiential activities. Previous studies have highlighted that disaster education for young children should be designed through contextual learning approaches that allow children to recognize risks and develop appropriate responses in their environments (Hariati & Utami, 2025; Nisa', 2021). Therefore, the implementation at PAUD Kasih Ibu demonstrates that disaster education can be embedded within existing learning processes without separating it as an additional subject.

Contribution of Disaster Preparedness to Character Education

The integration of disaster preparedness and character education represents an important contribution of this study. Disaster activities provide opportunities for children to practice responsibility, independence, cooperation, and care for others. This finding is consistent with previous research showing that disaster education can contribute to the development of children's preparedness character through contextual experiences and habituation processes (Mustofa & Handini, 2020). Previous research has also emphasized that disaster preparedness programs are influenced by factors such as institutional commitment, teacher capacity, policy support, and community participation (Winugroho et al., 2021). With integration education character through preparedness programs disasters in the learning process, will generate character values religious, nationalist, independent, mutual cooperation, and integrity (Anisah & Sumarni, 2019).

In education character implementation through preparedness programs disaster at PAUD Kasih Ibu, resulting in increase in value character child in line with five values main mutual characters related in form network mark (Kementerian Pendidikan, 2022). Participants educated at PAUD Kasih Ibu are guided to know and believe in the existence of Almighty God One through His creation. Besides that, children are accustomed to developing attitudes of discipline, independence, caring attitude, respect for each other, and tolerance to fellow (Siregar, 2020).

Implementation of Character Education through preparedness programs disasters that occurred at PAUD Kasih Ibu guided by the three pillars of SPAB, including integrate PRB education to in curriculum school as form strengthening character education, in line with the research of Mustofa and Handini (2020). Disaster education need there is skills specifically

trained for children disaster education has also been integrated with a number of eye lesson in 2013 curriculum. One theme specifically discussing disaster That peeling in a way complete How response when happen disaster.

Situating the Findings in International Literature and Theory

The three SPAB pillars at PAUD Kasih Ibu correspond closely to the Comprehensive School Safety Framework, which calls for safe learning facilities, school disaster management, and risk reduction and resilience education (Global Alliance for Disaster Risk Reduction and Resilience in the Education Sector, 2022), and they respond to the Sendai Framework's call to integrate disaster risk knowledge into education. The case of United Nations Office for Disaster Risk Reduction (2015) therefore shows how an internationally recognized framework can be carried out in a small, community-based early childhood setting. This is relevant because Selby and Kagawa (2012), in a review of case studies from thirty countries, document the infusion of disaster risk reduction into existing subjects as one of the main curricular approaches, which is the route visible in the semester, weekly, and daily plans shown in Figures 3 and 4.

Bronfenbrenner's (1979) ecological systems theory helps explain why the collaboration documented in this study matters. In this view, a child's development is shaped by interacting settings such as school and family, which are in turn influenced by wider institutions. At PAUD Kasih Ibu, the preparedness team, the training of parents (Figure 5), cooperation with Dompot Dhuafa and the Education Office, and the planned partnership with BPBD connect these settings around shared safety goals. Ronan and Johnston (2005) similarly argue that schools, families, and communities can reinforce one another in promoting resilience, and Mitchell et al. (2008) describe children as active communicators of disaster risk. The "Doctor Cilik" activity and the involvement of parents can be read in this light, as ways of encouraging children to help others and to carry safety messages into the home, although this study did not examine whether such transfer occurred.

Vygotsky's (1978) sociocultural theory offers a lens for interpreting the learning strategies in Table 4 and the simulations. In this theory, young children learn through social interaction and guided participation, supported by cultural tools such as language, stories, and songs. Teachers who tell stories, lead simulations, and use a familiar tune to rehearse protective actions act as guides who help children perform behaviors they could not yet organize on their own. This interpretation is consistent with the finding that disaster education for young children should be concrete and experiential (Dewi, 2022) and with international evidence that children's participation in disaster education programs is associated with gains in knowledge of risks and protective actions (Johnson et al., 2014; Ronan et al., 2015).

Lickona's (1991) model of character, which comprises moral knowing, moral feeling, and moral action, helps clarify how disaster preparedness can serve as a vehicle for character education. Children learn why safety behaviors matter (knowing), are encouraged to care for others, as in the "Doctor Cilik" activity (feeling), and practice cooperation and discipline during evacuation drills (action). This reading supports the claim that disaster activities provide a contextual setting for the character values identified in this study, but, as discussed below, it does not demonstrate that these values changed.

Finally, global reviews caution that evidence on disaster education for children rests mainly on knowledge measures and has methodological limitations (Johnson et al., 2014; Ronan et al., 2015). The present study complements that literature by documenting how a program is organized and governed, but it shares the same limitation with respect to outcomes. Future research could combine this governance perspective with measures of children's preparedness behaviour and character development.

Implications and Challenges

Although PAUD Kasih Ibu has implemented SPAB components, challenges remain regarding infrastructure limitations, community understanding, and funding availability. These findings indicate that sustainable disaster preparedness requires continuous support from educational institutions, government agencies, and communities. Therefore, disaster preparedness programs in early childhood education should be viewed as long-term investments in building resilient educational environments rather than temporary disaster response activities.

The integration of disaster preparedness education with character education is one of the important contributions of this study. The findings indicate that disaster preparedness activities provide opportunities for children to practice values such as independence, cooperation, responsibility, discipline, and concern for others. These values emerge through activities requiring children to follow evacuation procedures, cooperate during simulations, and understand safety behaviours. However, this study does not measure changes in children's character quantitatively; therefore, the findings should be interpreted as evidence of the potential contribution of disaster preparedness activities to character development rather than proof of program effectiveness.

The findings carry implications at three levels. For practice, early childhood institutions can adopt the combination seen here: classrooms with two exits, marked routes to an assembly point, hazard-specific SOPs with time targets, and regular simulations using child-friendly methods (Tables 1 to 4). For policy, the challenges of limited facilities, community understanding, and funding suggest that SPAB implementation in early childhood education needs support from the Education Office, the regional disaster management agency (BPBD), and local government, in line with the multi-level collaboration emphasized in the international frameworks discussed above (Global Alliance for Disaster Risk Reduction and Resilience in the Education Sector., 2022; United Nations Office for Disaster Risk Reduction, 2015). For research, the study provides a descriptive base on which evaluations of children's preparedness and character outcomes can be built.

Overall, this study provides insight into how disaster risk management can be integrated into early childhood education governance through the SPAB framework. The contribution of this research lies in illustrating the implementation process of disaster preparedness through three interconnected dimensions: safe school facilities, disaster management systems, and disaster risk reduction education. Rather than proving the effectiveness of disaster preparedness programs, this study highlights the mechanisms and institutional practices that support the development of safer and more resilient early childhood education environments.

Conclusion

PAUD Kasih Ibu has succeed implementing preparedness programs disaster (SPAB) with integrate education character to in curriculum and activities school. With adopt three main pillars, namely facility school safe, management disasters in schools and education prevention as well as subtraction risk disaster. PAUD Kasih Ibu ensures that children educate No only get understanding about disaster but also involved active in preparation face disaster. Through the SPAB program, schools succeed build awareness early about preparedness disaster among children and society around. Approach This put forward strengthening education characters that include values religious, nationalist, independent, mutual cooperation, and integrity. In addition that, design facility supportive schools evacuation disasters, as well as training and simulation disasters that occur in a way routine, improve readiness children and labor educator For face situation emergency.

However, there is a number of challenges faced, such as limitations understanding public around about preparedness disasters and limitations facility schools that have not fully fulfil

standard security. Obstacles This overcome with carry out training additional and maximize existing facilities. The success of this program is also driven by good cooperation between the school, committee schools, Bekasi Regency Education Office, and the community. In general Overall, PAUD Kasih Ibu shows that education preparedness disaster and strengthening character can walk along with, creating safe and ready environment standby for children educate in face potential.

Declarations

Author contribution statement

Anita Kresnawaty, Maulidya Ulfah, and Libri Rizka Puri Windarta contributed to the development of this research and the preparation of the manuscript. The authors contributed to the research design, data collection, data analysis, interpretation of findings, and manuscript preparation according to their respective roles. All authors reviewed and approved the final version of the manuscript.

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Data availability statement

The data supporting the findings of this study are available from the corresponding author upon reasonable request, subject to applicable ethical considerations and participant confidentiality.

Declaration of interests statement

The authors declare that they have no known competing financial interests or personal relationships that could have influenced the work reported in this paper.

Declaration of using AI (Artificial Intelligence)

Artificial intelligence (AI) tools were used to assist with language drafting and editing of the manuscript. The authors reviewed and revised the AI-assisted content and take full responsibility for the accuracy, originality, and integrity of the manuscript.

Additional information

The authors confirm that this manuscript reports original research on the integration of disaster preparedness management into early childhood education governance at PAUD Kasih Ibu, Bekasi, Indonesia. All authors are responsible for the content and integrity of the manuscript.

References

- Amir, N. (2016). Penerapan model pembelajaran picture and picture melalui media gambar pada subtema kesiapsiagaan gempa bumi untuk ketuntasan hasil pembelajaran anak TK Nurul Iman Lhokseumawe. *Jurnal Ilmu Kebencanaan: Program Pascasarjana Unsyiah*, 3(4). <https://doi.org/https://doi.org/10.24114/js.v3i1.11661>
- Anindhita, W., Sari, E., & Kusuma, D. L. (2024). Mitigasi bencana banjir pada anak usia dini. *Jurnal Inovasi Hasil Pengabdian Masyarakat (JIPEMAS)*, 7(2), 504–515. <https://doi.org/https://doi.org/10.33474/jipemas.v7i2.21759>
- Anisah, N., & Sumarni, S. (2019). Model sekolah aman bencana dalam upaya mewujudkan pendidikan karakter di MIN 1 Bantul. *Literasi: Jurnal Ilmu Pendidikan*, 10(1), 9–20. [https://doi.org/https://doi.org/10.21927/literasi.2019.10\(1\).9-20](https://doi.org/https://doi.org/10.21927/literasi.2019.10(1).9-20)

- Atmojo, M. E. (2020). Pendidikan Dini Mitigasi Bencana. In *Jurnal Pengabdian Kepada Masyarakat* (Vol. 3, Number 2). <http://ejournal.bsi.ac.id/ejurnal/index.php/abdimas>
- Bronfenbrenner, U. (1979). *The Ecology of Human Development: Experiments by Nature and Design*. Harvard Univeristy Press.
- Dewi, D. J. K. (2022). Pentingnya pembelajaran mitigasi bencana untuk anak usia dini di indonesia: Sebuah tinjauan literatur. *Proceedings of The 6 Th Annual Conference on Islamic Early Childhood Education*, 15–22. <http://conference.uin-suka.ac.id/index.php/aciece>
- Dewi, R. S. (2019). Mitigasi bencana pada anak usia dini. *Early Childhood: Jurnal Pendidikan*, 3(1), 68–77. <https://doi.org/https://doi.org/10.35568/earlychildhood.v3i1.438>
- Efastri, S. M., Suharni, & Zaputra, R. (2024). Emergency drill: Mitigasi bencana banjir bagi anak usia dini. *Harmoni Masyarakat*, 2(1), 20–28. <https://doi.org/https://doi.org/10.33222/pelitapaud.v7i2.3089>
- Global Alliance for Disaster Risk Reduction and Resilience in the Education Sector. (2022). *Comprehensive school safety framework*.
- Hanurawan, F. (2016). *Metode penelitian kualitatif: untuk ilmu Psikologi*.
- Hariati, S., & Utami, R. U. (2025). Penerapan model pembelajaran kontekstual pada anak usia dini di RA Panca Bakti Kabupaten Labuhan Batu Utara. *Jurnal Review Pendidikan Dan Pengajaran (JRPP)*, 8(2), 3887–3892. <https://doi.org/https://doi.org/10.31004/jrpp.v8i2.44298>
- Johnson, V. A., Ronan, K. R., Johnston, D. M., & Peace, R. (2014). Evaluations of disaster education programs for children: A methodological review. *International Journal of Disaster Risk Reduction*, 9, 107–123. <https://doi.org/10.1016/j.ijdr.2014.04.001>
- Kementerian Pendidikan, K. R. dan T. (2022). *Panduan Penyelenggaraan PAUD Berkualitas Seri 6: Lingkungan Belajar Aman*.
- Khambali, K., Inten, D. N., Mulyani, D., Lichandra, F., & Tiwi, D. (2022). Peran orang tua terhadap pembelajaran mitigasi bencana bagi anak usia dini di masa covid-19. *Jurnal Obsesi : Jurnal Pendidikan Anak Usia Dini*, 6(3), 1881–1896. <https://doi.org/10.31004/obsesi.v6i3.1866>
- Lestari, H., Wijayanti, R., & Akbar, M. R. (2026). Pengembangan karakter tangguh bencana anak usia dini melalui kegiatan orangtua. *Jiip (Jurnal Ilmiah Ilmu Pendidikan)*, 9(1), 238–245. <https://doi.org/https://doi.org/10.54371/jiip.v9i1.10229>
- Lickona, T. (1991). *Educating for Character: How Our Schools can Teach Respect and Responsibility*. Bantam Books. <https://doi.org/https://doi.org/10.1177/019263659207654519>
- Mitchell, T., Haynes, K., Hall, N., Choong, W., & Oven, K. (2008). The roles of children and youth in communicating disaster risk. *Children, Youth and Environments*, 18(1), 254–279. <https://doi.org/https://doi.org/10.1353/cye.2008.0036>
- Mustofa, M., & Handini, O. (2020). Pendidikan kebencanaan berbasis kearifan lokal dalam penguatan karakter siapsiaga bencana. *Geodika: Jurnal Kajian Ilmu Dan Pendidikan Geografi*, 4(2), 200–209. <https://doi.org/10.29408/geodika.v4i2.2776>
- Nisa', T. F. (2021). Pendidikan Kebencanaan untuk Anak Usia Dini. In D. U. Sutiksno & Ratnadewi (Eds.), *Kebencanaan dalam Berbagai Perspektif Ilmu* (p. 83). CV. Penerbit Qiara Media.
- Nuraeni, M. (2021). Integrasi pendidikan kebencanaan dalam kurikulum K13 anak usia dini. *Jurnal Pengabdian Kepada Masyarakat Cahaya Mandalika (Abdimandalika)*, 2(2), 223–231.
- Nurfadilah, & Darsono, D. R. (2021). Pendidikan kebencanaan pada lembaga PAUD Rawan Banjir di Jakarta Pusat. *AL-AZHAR INDONESIA SERI HUMANIORA*, 6(1), 66–71. <https://doi.org/https://doi.org/10.36722/sh.v6i1.637>
- Ronan, K. R., Alisic, E., Johnson, V. A., & Johnston, &. (2015). Disaster preparedness for children and families: A critical review. *Current Psychiatry Reports*, 17(7). <https://doi.org/https://doi.org/10.1007/s11920-015-0589-6>
- Ronan, K. R., & Johnston, D. M. (2005). *Promoting community Resilience in Disasters: The Role for Schools, Youth, and Families*. Springer (Springer Science & Business Media). <https://doi.org/https://doi.org/10.1007/b102725>

- Selby, D., & Kagawa, F. (2012). *Disaster Risk Reduction in School Curricula: Case Studies from Thirty Countries*. UNICEF and UNESCO .
- Siregar, M. (2020). Pendidikan karakter peduli lingkungan pada anak usia dini melalui metode karya wisata sebagai upaya mitigasi bencana ekologis. *Al-Mahyra: Jurnal Penelitian Dan Pengembangan Pendidikan Islam*, 1(02), 134–142.
- Suarmika, P. E., & Utama, E. G. (2017). Pendidikan mitigasi bencana di sekolah dasar (sebuah kajian analisis etnopedagogi). *JPDI (Jurnal Pendidikan Dasar Indonesia)*, 2(2), 18–24. <https://doi.org/http://dx.doi.org/10.26737/jpdi.v2i2.327>
- Tirtayani, L. A., & Jampel, I. N. (2018). Materi Siaga Bencana pada Kurikulum Pendidikan Anak Usia Dini (PAUD) di Bali. *Rosiding Seminar Nasional Dan Call For Paper Peranan Psikologi Bencana Dalam Mengurangi Risiko Bencana*, 186–199. <https://doi.org/https://doi.org/10.33369/pendipa.6.2.609-615>
- United Nations Office for Disaster Risk Reduction. (2015). *Sendai Framework for Disaster Risk Reduction 2015–2030*. https://doi.org/https://doi.org/10.1163/2210-7975_hrd-9813-2015016
- Vygotsky, L. S. (1978). *Mind in Society: The Development of Higher Psychological Processes* . Harvard University Press.
- Winugroho, T., Apriyadi, R. K., & Apriliyanto. (2021). Pengaruh persepsi penyebaran covid-19 terhadap kesiapsiagaan bencana pandemi pada guru PAUD Kota Magelang. *Pedagogi: Jurnal Anak Usia Dini Dan Pendidikan Anak Usia Dini*, 7(1), 94–105. <https://doi.org/https://doi.org/10.30651/pedagogi.v7i1.6980>
- Wulandari, D., Bangun, E., Suwarno, P., Widodo, P., & Wilopo. (2024). Aksi pengurangan risiko bencana dengan penerapan program satuan pendidikan aman bencana di sekolah. *NUSANTARA: Jurnal Ilmu Pengetahuan Sosial*, 11(6), 2430–2433. <https://doi.org/https://doi.org/10.23887/jjipg.v12i3.75265>
- Wulandari, H., & Salsabila, S. S. (2023). Analisis standarisasi sarana dan prasarana sekolah PAUD dalam memfasilitasi kegiatan anak. *ECIE (Journal of Early Childhood and Inclusive Education)*, 7(1), 22–31.
- Yadnya, M. S., Zaenuddin, A., Kanata, B., Ratnasari, D., Zubaidah, T., & Paniran. (2020). Program sekolah siaga bencana gempa bumi dan tsunami di PAUD Ponpes Nurul Wathan Lombok Tengah. *Prosiding PEPADU*, 2, 5–9. <https://doi.org/https://doi.org/10.29303/jgn.v2i3.99>