



Multicultural Disaster Mitigation Education in Elementary Schools: An Inclusive Approach to Disaster Risk Management

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Abstract

Disaster mitigation education at the elementary school level plays a critical role in developing students' awareness, preparedness, and collective responsibility toward disaster risks. In multicultural urban contexts such as Medan City, however, its implementation remains challenged by learning approaches that emphasize technical knowledge while overlooking socio-cultural diversity. This study explores the implementation of multicultural-based disaster mitigation education in elementary schools in Medan City and examines pedagogical practices and challenges encountered in diverse learning environments. Using a qualitative case study design, data were collected through in-depth interviews with 20 teachers, 50 students, and 10 parents, supported by classroom observations in five multicultural elementary schools. The findings reveal that integrating multicultural values into disaster mitigation education enhances students' disaster risk awareness while fostering mutual respect, collaboration, and cross-cultural social solidarity. Contextual and inclusive pedagogical strategies enable students to understand disaster mitigation as a shared collective responsibility. Nevertheless, challenges persist, particularly regarding teacher preparedness, curriculum integration, and limited school–community collaboration. This study highlights the importance of culturally responsive curricula, sustained teacher capacity development, and strengthened partnerships among schools, families, and communities to improve the effectiveness of disaster mitigation education in multicultural settings.

Keywords: disaster mitigation education; disaster risk; multicultural education; elementary school; inclusivity.

Abstrak

Pendidikan mitigasi bencana di tingkat sekolah dasar memainkan peran kritis dalam mengembangkan kesadaran, kesiapan, dan tanggung jawab kolektif siswa terhadap risiko bencana. Namun, dalam konteks perkotaan multikultural seperti Kota Medan, implementasinya masih dihadapkan pada tantangan akibat pendekatan pembelajaran yang menekankan pengetahuan teknis sambil mengabaikan keragaman sosio-budaya. Studi ini mengeksplorasi implementasi pendidikan mitigasi bencana berbasis multikultural di sekolah dasar di Kota Medan dan menganalisis praktik pedagogis serta tantangan yang dihadapi dalam lingkungan pembelajaran yang beragam. Menggunakan desain studi kasus kualitatif, data dikumpulkan melalui wawancara mendalam dengan 20 guru, 50 siswa, dan 10 orang tua, didukung oleh pengamatan kelas di lima sekolah dasar multikultural. Temuan menunjukkan bahwa integrasi nilai-nilai multikultural ke dalam pendidikan mitigasi bencana meningkatkan kesadaran siswa terhadap risiko bencana sambil memupuk saling menghormati, kolaborasi, dan solidaritas sosial lintas budaya. Strategi pedagogis kontekstual dan inklusif memungkinkan siswa memahami mitigasi bencana sebagai tanggung jawab kolektif bersama. Namun, tantangan tetap ada, terutama terkait kesiapan guru, integrasi kurikulum, dan kolaborasi sekolah-masyarakat yang terbatas. Studi ini menyoroti pentingnya kurikulum yang responsif terhadap budaya, pengembangan kapasitas guru yang berkelanjutan, dan penguatan kemitraan antara sekolah, keluarga, dan

masyarakat untuk meningkatkan efektivitas pendidikan mitigasi bencana di lingkungan multikultural.

Kata Kunci: pendidikan mitigasi bencana; risiko bencana; pendidikan multikultural; sekolah dasar; inklusivitas.

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Introduction

Indonesia is highly vulnerable to a wide range of disasters, including natural hazards such as floods, earthquakes, landslides, forest fires, and droughts, as well as non-natural disasters such as social conflicts, disease outbreaks, and environmental pollution. Floods represent the most frequent disaster type, accounting for 34.1% of total events, followed by extreme weather (27.5%), landslides (20.3%), forest fires (11.3%), and droughts (6.7%). DIBI data from 2000–2024 indicate a substantial increase in disaster occurrences since 2010. Floods and landslides contribute to 33.2% and 36.3% of disaster-related fatalities, respectively, while floods account for 97.2% of displacement and 69% of housing damage. Droughts affect 31.8% of impacted populations, particularly in southern regions such as Java and Nusa Tenggara (Hendrawan et al., 2025).

Indonesia's exposure to disasters is intensified by its location at the convergence of three major tectonic plates, its tropical climate, and high population density, which collectively increase susceptibility to earthquakes, floods, landslides, fires, and extreme weather events (Chaney, 2024; Mukesh et al., 2024; Palinkas, 2020). These conditions underline the necessity of systematic and long-term disaster risk reduction efforts that extend beyond structural mitigation and emergency response. Disaster mitigation education, particularly from an early age, is therefore essential to fostering preparedness and resilience.

Evidence consistently shows that disaster mitigation education at the primary school level enhances children's disaster awareness, preparedness, and social resilience (Haris et al., 2023; Nasution et al., 2022). However, in culturally diverse societies such as Indonesia, the effectiveness of such education is strongly shaped by how well schools address students' cultural, linguistic, social, and familial diversity (R. S. Dewi et al., 2023; Haris et al., 2023). Disaster mitigation education that overlooks these dimensions risks remaining superficial and disconnected from students' lived realities.

Medan City offers a particularly relevant context for examining this issue. As a multicultural metropolitan area characterised by high ethnic, religious, and social diversity,

Medan is also exposed to significant disaster risks, including urban flooding, residential fires, and other hydrometeorological hazards (K. M. P. Dewi et al., 2023). Research suggests that disaster mitigation education integrating multicultural values, social solidarity, and collaborative learning not only improves technical understanding of disaster risks but also strengthens social cohesion and collective responsibility (R. S. Dewi et al., 2023; Haris et al., 2023; Nasution et al., 2022). Such integration is therefore critical for building sustainable disaster resilience in urban environments.

Primary schools play a strategic role in shaping disaster-related knowledge, attitudes, and skills, as students at this stage are in a formative period of character and social value development (Nurdiansyah & Dewi, 2025; Paudel et al., 2024). Disaster mitigation education is thus expected not only to convey information about hazards and response procedures but also to cultivate empathy, cooperation, responsibility, and collective preparedness (Paudel et al., 2024; Raj et al., 2021; Sheehy et al., 2024).

In Indonesia's pluralistic context, disaster mitigation education should be embedded within learners' social and cultural realities. Multicultural-based disaster mitigation education integrates cultural, ethnic, religious, and social diversity into learning content, pedagogical strategies, and classroom practices (Firdaus et al., 2023; Lestari et al., 2025). This approach emphasises tolerance, mutual respect, and cross-cultural cooperation as key social capital in disaster situations, positioning disaster preparedness as a collective rather than individual responsibility (Sheehy et al., 2024; Suarmika et al., 2022).

Medan exemplifies both the opportunities and challenges of implementing such an approach. The city is home to diverse ethnic groups—including Batak, Malay, Javanese, Minangkabau, and Chinese communities—with varied religious and cultural backgrounds. This diversity is reflected in primary schools, where students bring different communication styles, social norms, and interpretations of disaster risks shaped by family and community experiences (Patras et al., 2025). At the same time, Medan faces persistent disaster threats due to heavy rainfall, inadequate drainage systems, dense settlements, and environmental degradation (Aulia, 2019; Ito & Takarev, 2021; Prats et al., 2023).

Despite these realities, disaster mitigation education in Medan's primary schools remains largely generalised and technically oriented, with limited integration of multicultural values (Ito & Takarev, 2021; Prats et al., 2023). Pedagogical practices tend to prioritise cognitive aspects—such as identifying disaster types and evacuation procedures—while giving insufficient attention to local contexts, students' everyday language, and cultural

values emphasising mutual assistance. Consequently, disaster mitigation messages are often understood at a surface level and are not internalised as shared attitudes guiding collective behaviour (Mulianingsih, 2025; Sheehy et al., 2024; Suarmika et al., 2022).

Social inequalities and dense living conditions in Medan further exacerbate disaster vulnerability, particularly among children from disadvantaged backgrounds who may have limited access to information and support. Without culturally sensitive education, disaster mitigation efforts risk reinforcing inequalities and weakening social solidarity (Harfiani & Mavianti, 2024; Sirait et al., 2025). Additionally, limited collaboration between schools, families, and communities reduces the potential of disaster mitigation education to become a sustained collective practice (Bahri et al., 2025; Hermawan et al., 2024).

Existing studies on disaster mitigation education predominantly emphasise technical preparedness, while multicultural education research rarely engages with disaster contexts. This disconnect is especially evident in Indonesia, where disaster studies are largely quantitative and conducted in relatively homogeneous settings, offering limited insight into the social and pedagogical dynamics of multicultural urban areas such as Medan. Addressing this gap, the present study employs a qualitative case study approach to explore the implementation of multicultural-based disaster mitigation education in Medan's primary schools. By foregrounding social solidarity and collective responsibility, this research aims to contribute empirical insights for developing more contextual, inclusive, and effective disaster mitigation education policies in multicultural regions of Indonesia.

Method

This study adopted a qualitative approach with a case study design to obtain an in-depth understanding of the processes, meanings, and dynamics underlying the implementation of multicultural-based disaster mitigation education in elementary schools. A qualitative approach was deemed appropriate as it enables the exploration of complex social and educational phenomena within their natural contexts, particularly when the phenomenon is closely intertwined with socio-cultural and institutional settings (Merriam, 2009). The case study design allowed for a comprehensive examination of disaster mitigation education practices within multicultural elementary school environments.

The research was conducted in five elementary schools in Medan City, North Sumatra, Indonesia. Medan City was selected due to its high levels of ethnic, religious, and socio-cultural diversity, as well as its exposure to various urban disaster risks, including flooding, residential fires, and environmental hazards in densely populated areas. These

characteristics make Medan a relevant and representative context for investigating multicultural-based disaster mitigation education in urban primary schools.

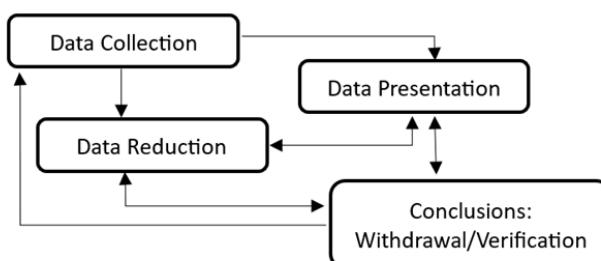
Participants consisted of 20 teachers, 50 students, 10 parents, and school stakeholders directly involved in the planning and implementation of disaster mitigation learning activities. Participant selection employed purposive sampling based on specific criteria: (1) teaching or learning experience in multicultural elementary school settings, (2) involvement in disaster mitigation-related educational activities or materials, and (3) willingness to provide detailed information regarding instructional practices. In total, the study involved 20 teachers, 50 students from Grades IV–VI, and 10 parents across the five schools. Convenience sampling was applied to support participant recruitment due to time and accessibility constraints, which is considered acceptable in qualitative research that prioritises depth and relevance over statistical generalisation (Büyüköztürk et al., 2012).

Table 1. Participant Demographics

Category/Code	Age	Quantity	Gender	n
Students (S)	10-12 years	50 people	28 Female, 22 Male	S1 - S50
Parents (P)	30-45 years	10 people	8 Female, 2 Male	P1 - P10
Teachers (T)	25-45 years	20 people	13 Female, 7 Male	T1 - T20

Source: Research Data, 2025

Data were collected using multiple techniques to enhance depth and credibility. First, semi-structured in-depth interviews were conducted with teachers and school stakeholders to explore their experiences, perceptions, and understandings of disaster mitigation education and the integration of multicultural values in classroom practices. Interview guidelines were designed flexibly to allow participants to articulate their experiences comprehensively. Second, classroom and school activity observations were undertaken to examine how disaster mitigation education and multicultural values were enacted in teaching and learning processes, with particular attention to classroom interactions, student participation, and inclusive pedagogical practices. Third, documentary analysis was conducted on lesson plans, teaching materials, school curricula, and other relevant documents to triangulate and complement data obtained from interviews and observations.



Picture 1. Data Analysis Framework

Data analysis followed a thematic approach conducted iteratively throughout the research process. This involved data reduction through the selection and organisation of relevant information, data display in the form of narrative descriptions and thematic matrices, and conclusion drawing and verification through continuous reflection and comparison (Çepni, 2010; Merriam, 2009).

To ensure trustworthiness, the study employed triangulation of data sources (teachers, students, parents, and school stakeholders), data collection techniques (interviews, observations, and documentation), and time. Repeated data checking and reflective analysis were also conducted to minimise researcher bias and enhance credibility.

Ethical considerations were rigorously observed. All participants were informed of the study's objectives, the voluntary nature of participation, and confidentiality measures. Informed consent was obtained prior to data collection, and all data were used exclusively for academic and research purposes.

Result and Discussion

This section presents the research findings and discussion in an integrated manner in accordance with the journal template, linking empirical findings with theoretical frameworks and previous studies. The presentation focuses on the implementation of multicultural disaster mitigation education in primary schools in Medan City, inclusive pedagogical practices, student engagement, and its implications for strengthening social solidarity.

Observation data shows that a more interactive and experience-based approach can enhance students' understanding of disaster mitigation. Activities such as evacuation simulations, creating posters about disaster mitigation, and group discussions can help students better grasp the concepts. This research emphasizes the importance of experience-based education in raising students' awareness and preparedness for disasters.



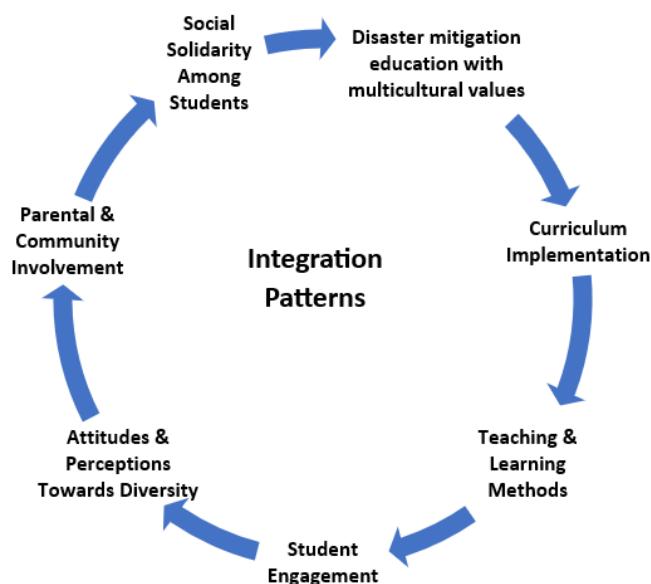
Picture 2. Student Activities in Multicultural-Based Collaborative Disaster Mitigation Project Learning (Source: Personal)

Interviews and observations indicate that teachers are actively integrating multicultural values into disaster mitigation education, despite constraints related to limited resources and culturally responsive teaching materials. Student participation was notably high when learning activities were connected to their cultural experiences, fostering an inclusive environment in which students felt comfortable expressing views on disaster-related issues. Teachers reported that disaster mitigation education has been embedded across subjects such as Social Studies, Civic Education, and Natural Science, emphasising not only technical responses to hazards like tidal flooding but also core values of togetherness and mutual cooperation. As one teacher explained, "We teach students how to recognize the signs of tidal flooding, but more than that, we also teach them to cooperate, regardless of their cultural background. We use folk stories from various ethnic groups in Medan to instil values of solidarity."

Meanwhile, the results of interviews with students revealed that they are very enthusiastic about disaster mitigation lessons, especially when these lessons are linked to their cultural experiences. Students feel that the multicultural-based approach not only helps them understand the technical ways to face disasters but also enriches them with broader cultural perspectives. One student, who is of Malay descent, said, "We are taught that if a flood occurs, we must work together. The teacher often tells stories about how our ancestors helped each other during disasters, and that makes me feel more prepared."

Parents interviewed emphasized the importance of schools in educating their children about disaster mitigation, but also about values of intercultural solidarity. A parent of Batak ethnicity said, “The school not only teaches my children how to survive tidal flooding but also teaches them to respect cultural differences, which is very important in this city.”

Overall, the findings indicate that multicultural-based disaster mitigation education in primary schools in Medan has a positive impact on students’ understanding of disaster risks, as evidenced by improved disaster mitigation knowledge and enhanced ability to collaborate within multicultural groups. Parental involvement also emerges as a key supporting factor, with families actively participating in school-based disaster preparedness programmes. These results highlight the importance of implementing culturally grounded disaster mitigation education as a strategic response to tidal flooding risks in Indonesia’s diverse socio-cultural context, as illustrated in Figure 3.



Picture 3. Integration of Disaster Mitigation Education with Multicultural Values

Data analysis revealed several key findings derived from participants’ narratives and experiences, which were organised into thematic categories highlighting knowledge, strategies, and the implementation of multicultural disaster mitigation education in primary schools. To ensure the multicultural scope of the study, participants—including students, parents, and teachers—were selected from diverse backgrounds, age groups, and genders to capture a wide range of perspectives, as summarised in Table 2.

Table 2. Indicators and Analysis of Disaster Mitigation Education Implementation in Elementary Schools

Kategori	Indicator	Sub-indicator	f	Outcomes
Curriculum Implementation	Disaster mitigation curriculum	Students who recognise the importance of disaster mitigation education.	40 (S), 16 (G), 8 (O).	Students agree that disaster mitigation should be taught in schools.
		Parents who support disaster mitigation education.	7 (O), 14 (G), 35 (S).	Parents feel that this education is important for their children.
	Multicultural Curriculum	Students who are actively involved in group learning.	42 (S), 17 (G), 8 (O).	Students actively participate in group discussions.
		Students who feel comfortable expressing their opinions	37 (S), 16 (G), 7 (O).	Students feel free to talk about disaster issues.
Type of Material	Relevance to Local Context	The lessons cover stories, traditions and experiences from various cultures related to disaster mitigation.	40 (S), 16 (G), 8 (O).	Students understand various local stories, traditions, and cultural experiences related to disaster mitigation.
		The curriculum incorporates local cultural contexts into disaster mitigation education.	14 (G), 36 (S), 7 (O)	The school curriculum incorporates local context into disaster mitigation learning.
Teaching and Learning Methods	Pedagogical Approach	Teachers use teaching methods that emphasise collaboration between students from different cultural backgrounds.	15 (G), 37 (S), 7 (O)	Teachers implement teaching methods that emphasise collaboration among students from different cultural backgrounds.
		Inclusive Activities	44 (S), 18 (G), 8 (O).	Teachers implement classroom activities that encourage students to interact with one another.
Student Involvement	Participation in Discussions	Students from diverse backgrounds participated in discussions and learning activities on disaster mitigation.	46 (S), 18 (G), 7 (O).	Students engage in discussions and learning activities about disaster mitigation.
		Student Initiative	There is an initiative taken by students to educate their peers about disaster mitigation using their cultural perspective.	40 (S), 16 (G), 7 (O).
Attitudes and Perceptions Towards Diversity	Attitude Towards Peers	Students demonstrate positive attitudes towards friends from different backgrounds.	42 (S), 17 (G), 8 (O).	Students behave positively (respectfully, politely, cooperatively, empathetically) towards friends from different backgrounds.
		Awareness of the Consequences of Disasters	37 (S), 16 (G), 7 (O).	Students support each other in facing disasters
Parental Community Involvement	Parent Involvement	Parents are involved in school activities related to disaster mitigation and multiculturalism.	40 (S), 16 (G), 8 (O).	Parents are involved in learning activities on disaster mitigation and multiculturalism.
		Intercultural Dialogue	14 (G), 36 (S), 7 (O).	Parents engage in dialogue regarding diversity and disaster mitigation.
Social Solidarity Among Students	Cooperation in Mitigation Activities	Students from diverse backgrounds collaborate in disaster mitigation activities.	18 (G), 44 (S), 7 (O)	Students are involved in cooperation in disaster mitigation activities.

Kategori	Indicator	Sub-indicator	f	Outcomes
		Students involved in a project to introduce disaster mitigation tools involving all groups	44 (S), 18 (G), 8 (O).	Students are involved in disaster mitigation project learning.
Emotional Support		Students support each other when there is news or experiences related to disasters.	46 (S), 18 (G), 8 (O).	Students support each other when there is news and disasters occur

Source: Research data, 2025

Implementation of Multicultural Disaster Mitigation Education in Primary Schools

Table 2 of this study indicates that the implementation of disaster mitigation education in primary schools in Medan has occurred contextually, taking into account the diverse cultural backgrounds of students. The material on disaster mitigation is not merely presented as technical knowledge regarding types and management of disasters, but is also integrated with local cultural values and the social experiences of students (Amri et al., 2022; Appleby-Arnold et al., 2018). Teachers utilise examples that are closely related to the daily lives of students and connect them with practices of mutual assistance and cross-cultural cooperation. This approach aids students in understanding that disaster mitigation is a collective responsibility involving the entire school community. These findings align with the perspective of Desilia et al. (2023), which emphasises the importance of integrating local context into disaster mitigation education.



Picture 4. Implementation of Disaster Mitigation Education Through Collaborative Learning About Diversity and Mitigation Poster Projects (Source: Personal)

The results of the study elucidate that the implementation of disaster mitigation education in primary schools in Medan has transcended a purely technical approach and has begun to incorporate multicultural values within the learning process. This integration is reflected in the selection of materials, teaching strategies, and social interactions within the classroom. Teachers not only convey information regarding types and procedures for

disaster response but also relate it to cultural experiences, local stories, and social practices that are familiar to students from various backgrounds (Lestari et al., 2025; Lestari & Suwanto, 2024).

These findings reinforce the argument that contextual and culturally sensitive disaster mitigation education is more readily understood and interpreted by students as part of their social lives. In line with the research conducted by Suarmika et al. (2022) and Paudel et al. (2024), the integration of cultural values and local knowledge has been shown to enhance the relevance of learning and strengthen students' awareness that disaster mitigation is a collective responsibility of the community, rather than merely an individual obligation.

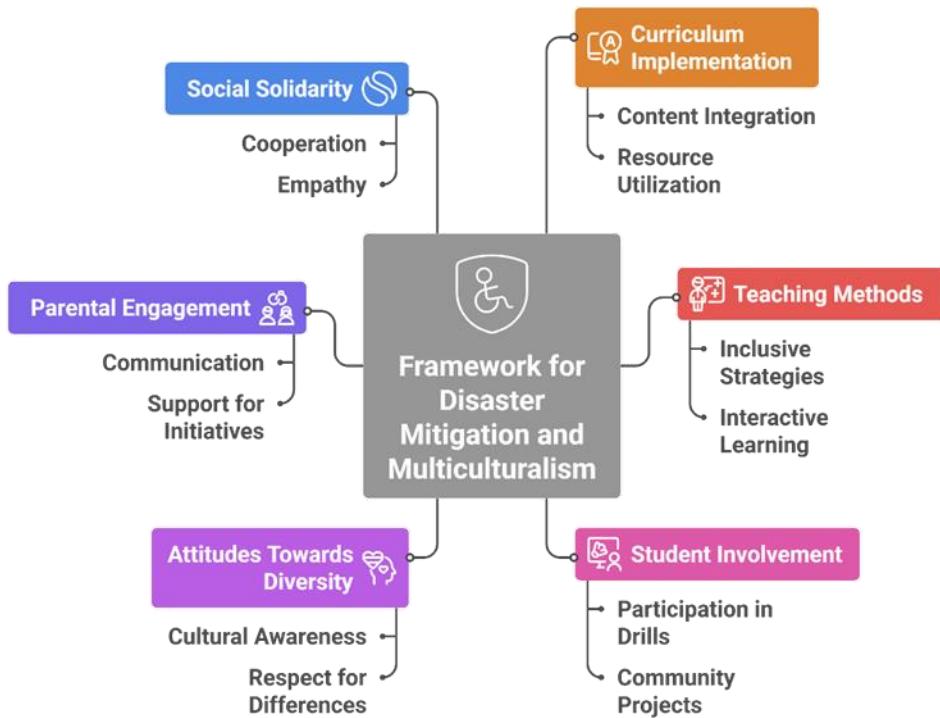
Inclusive Pedagogical Practices and Collaborative Learning

From a pedagogical perspective, educators implement various inclusive learning strategies, such as heterogeneous group discussions, evacuation simulations, and project-based learning. These practices encourage intensive interaction among students from diverse cultural backgrounds and create an equitable dialogue space within the classroom. Observational data indicates that students are more actively engaged when learning is designed collaboratively and based on shared experiences.

In terms of learning practices, educators employ inclusive pedagogical strategies through heterogeneous group discussions, evacuation simulations, and collaborative learning (Hariyadi & Rodiyah, 2023; Hendriksen et al., 2024). Classroom observations reveal positive interactions among students from various cultural backgrounds, where they share experiences and perspectives related to disasters. This learning pattern fosters a safe and participatory learning environment, thus ensuring that students feel valued and encouraged to take an active role (Desilia et al., 2023; Dreamson, 2023). These findings support multicultural education theory, which emphasises the importance of collaborative learning in reducing prejudice and strengthening social cohesion within the school environment (Cathrin & Wikandaru, 2023; Chaney, 2024; Chang, 2023).

These findings are consistent with multicultural education theory, which highlights the significance of collaborative learning in mitigating prejudice and enhancing social cohesion. Research by Sheehy et al. (2024) further affirms that inclusive approaches in disaster mitigation education significantly contribute to increased student participation and a sense of ownership regarding disaster-related issues. Consequently, the pedagogical practices

implemented in primary schools in Medan City align with best practices, as illustrated in the inclusivity framework depicted in Figure 5 below.



Picture 5. Multicultural-Based Disaster Mitigation Education Inclusivity Framework
(Source: Research Data Analysis, 2025)

Impact on Students' Risk Awareness and Social Solidarity

Data analysis indicates that multicultural disaster mitigation education impacts not only the enhancement of students' knowledge regarding disaster risks but also the formation of positive social attitudes. Students exhibit increased empathy, concern, and readiness to assist one another in both simulation contexts and discussions related to disasters. Social solidarity emerges as a primary outcome of this learning process (Dwiningrum et al., 2019).

The findings indicate that participation in multicultural disaster mitigation education leads to positive shifts in students' attitudes, reflected in increased disaster risk awareness, empathy, and willingness to support one another, as students increasingly view disaster mitigation as a collective effort requiring cooperation across differences. These results highlight the potential of disaster mitigation education to foster social character development in multicultural societies, extending the discourse beyond its traditional focus on technical preparedness (Feng et al., 2024; Ganapathy et al., 2023).

These results broaden the findings of previous research that generally focused on students' physical and cognitive preparedness. In contrast to conventional approaches, the multicultural approach enables students to understand that the impact of disasters is not uniformly experienced by all groups, thereby necessitating cross-cultural cooperation. This finding aligns with the work of Raj et al. (2021) and Chase and Morrison (2018), who emphasise that education based on social justice and diversity plays a crucial role in building social resilience within communities from an early age.

The Role of Parents and Communities in Disaster Mitigation Education

The study found that parental and community involvement strengthens the implementation of multicultural-based disaster mitigation education, with more consistent and sustained mitigation messages observed in schools that maintain active communication with parents (Irshad, 2024). Parental and community engagement plays a crucial role in supporting multicultural-based disaster mitigation education, as communication between schools and families reinforces mitigation messages and integrates school-taught values with family and community practices, thereby fostering more sustainable disaster awareness (Mensah, 2022; Ngiu et al., 2023). These findings align with the results of the study by Seddighi et al. (2023) which indicates that the success of disaster education is significantly influenced by the synergy between schools, families, and communities. In the context of the multicultural city of Medan, community involvement becomes increasingly important as values of preparedness and solidarity are often shaped through social interactions outside of school.

Challenges of Implementation and Theoretical Implications

Despite its positive outcomes, this study identifies key challenges, including limited teacher understanding of multicultural approaches, insufficient integration of disaster mitigation content into the formal curriculum, and a lack of supporting resources, revealing a gap between policy, curriculum, and classroom practice. These findings highlight the need for strengthened teacher capacity and more systematic educational policies to ensure the consistent implementation of multicultural-based disaster mitigation education (Pranoto et al., 2023; Prats et al., 2023).

The findings reinforce the view that disaster mitigation education should be understood as a social and cultural process rather than merely the transmission of technical

knowledge, with multicultural perspectives enriching disaster education through social solidarity, empathy, and collective responsibility (Raheem et al., 2023; Raj et al., 2021). Overall, the results confirm that multicultural-based disaster mitigation education enhances students' understanding of disaster risks while strengthening social solidarity and collective responsibility, contributing to the development of more inclusive and contextual education models for multicultural urban areas such as Medan.

Conclusion

This study demonstrates that multicultural-based disaster mitigation education in elementary schools in Medan positively enhances students' understanding of disaster risks while fostering cooperation, mutual respect, and social solidarity. The integration of multicultural values, supported by parental and community involvement, contributes to a more inclusive and effective learning environment. Nevertheless, challenges such as limited resources and inadequate teaching materials remain and require greater institutional support, including teacher training and policy attention. Overall, this approach has the potential to cultivate a generation that is more disaster-aware, collaborative, and capable of strengthening both individual and community resilience, positioning students as active agents of change in disaster risk mitigation.

Suggestion

From the results of this study, it is recommended that elementary schools increase parental involvement in disaster mitigation education. Additionally, training for teachers should be enhanced to better prepare them to integrate multicultural values into their teaching. Finally, the development of teaching materials that reflect cultural diversity should also be prioritized to support more effective disaster mitigation education.

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