

**Research Article**

# Multistakeholder Education Model in Strengthening Literacy and Disaster Awareness in Lampung Province

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**Abstract.**

An individual level of disaster awareness ultimately influences the approach and nature of actions taken to mitigate and prepare for disasters, and can contribute to reducing community vulnerability to disasters, especially among those from low socioeconomic backgrounds. Furthermore, a better understanding of the critical differences in information-seeking behavior can assist in designing effective intervention models and approaches. Therefore, this paper discusses the model for strengthening local communities' disaster awareness and information literacy behavior. Mixed method research is based on research questions using case studies from two local governments in Lampung Province; Bandar Lampung City and South Lampung Regency. Quantitative analysis was performed with simple statistics. Meanwhile, qualitative analysis was carried out using an interactive model assisted by triangulation tables. The solution that can be used so that disaster education and literacy become strong and equitable is to combine it with a specific approach. The approach we suggest in this research is the concept of multistakeholder education.

**Keywords:** disaster literacy, disaster education, disaster awareness

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## 1. Introduction

Lampung Province is a high-risk area and occupies the 16th position out of 33 provinces as disaster-prone areas in Indonesia based on data from the Indonesian Disaster Hazard Index from BNPB. The portion of the flood disaster covers 136 location points in 14 districts/cities. Areas with the potential for high to moderate landslides reaching 47.4%, are classified as significant and deserve attention. Not to mention the earthquake and tsunami that threatened the coastal areas of Lampung [1], even the City of Bandar Lampung has this risk [2]. Natural disasters are scary because of the impact of the damage. For example, in the Sunda Strait tsunami, 426 people were killed, 7,202 people were injured, and 23 were missing [3]. The risk of flood disasters with the impact of


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damage to public and household infrastructure is faced in areas [4] and rural areas where flooding is accompanied by landslides that result in unexpected casualties [5]. The disaster resulted in casualties due to the unpreparedness of the community to face the disaster, even though it could minimize the damage. This unpreparedness is motivated by literacy and disaster awareness among community groups.

Previous research has shown that people turn to various but widely available sources of disaster information, such as the internet, TV, and newspapers. People's choices of information sources were most influenced by factors such as the information source's trustworthiness and reputation and the information seeker's background [6]. Very few studies have been conducted on how a person's information-seeking behavior shapes the overall level of disaster awareness. A person's level of disaster awareness ultimately influences the approach and nature of actions taken to mitigate and prepare for disasters and can contribute to reducing community vulnerability to disasters, especially among those from low socioeconomic backgrounds. Furthermore, a better understanding of the critical differences in information-seeking behavior can assist in designing effective intervention models and approaches. Therefore, this paper discusses the model for strengthening local communities' disaster awareness and information literacy behavior.

## 2. Methods

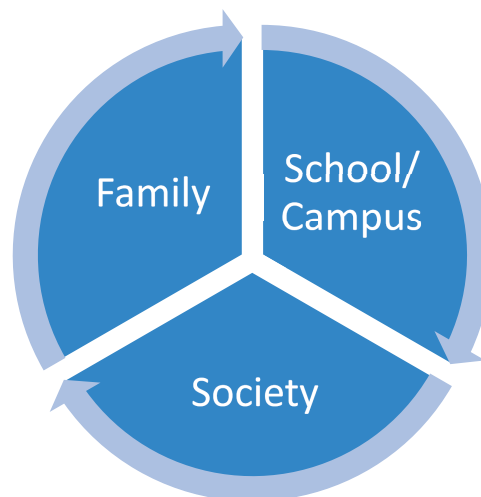
Mixed Method research is based on research questions using case studies from two local governments in Lampung Province; Bandar Lampung City and South Lampung Regency. The findings of this study will contribute to understanding the relationship between a person's socioeconomic background, disaster information-seeking needs and preferences, and level of disaster awareness. Furthermore, the data obtained can be used to build a model for strengthening community disaster awareness and disaster literacy. The method in this research is based on a comparative case study, which is an approach to community-based research and fits perfectly with the exploratory nature of this research. The data collection technique involves in-depth interviews and observations of several key informants in each local Government in the two cities. This technique collects data about potential factors that are managed and optimized for developing disaster awareness models. Qualitative analysis was carried out using an interactive model assisted by triangulation tables.

### 3. Results and Discussion

#### 3.1. Education-Based Disaster Literacy Model

The solution that can be used so that disaster education and literacy become strong and equitable is to combine it with a particular approach. The approach used in this research is the concept of Multistakeholder Education. The concept of Multistakeholder Education includes educational activities that are in the family environment, school environment, and community environment [7]. In other words, disaster education and literacy are applied to the family, school, and community.

Although Law Number 24 of 2007 mandates that the person in charge of disaster management is the Government (central) and Local Government, the general public also needs to be actively involved in disaster management, especially regarding disaster education and literacy. This is also in line with the Sendai Framework for Disaster Risk Reduction, which states that the enabling actors in providing support to the state are none other than non-state stakeholders. Education and disaster literacy held by the Government will have a high success rate if supported by community participation. Draft disaster education and literacy (PLB) within the framework of Multistakeholder Education referred to in this study can be illustrated in Figure ??.



**Figure 1:** Disaster Literacy in a Multistakeholder Education Framework.

Based on the Multistakeholder Education framework, the discussion about education and Disaster literacy is also translated into three sub-chapters: the family, school, and community. More clearly, the following description.

### 3.2. Education and Literacy Disaster in Family Environment

Based on Law Number 52 of 2009, the family is the smallest unit of society, consisting of husband and wife and their children, fathers and children, or mother and son. An individual is destined to be born by the Creator within a family, regardless of certain economic conditions and social strata. In a democratic state, an individual comes with all the potential that can be developed and formed through the educational process in the family. In other words, the family is the primary environment in shaping individual character. The family is the primary environment in individual child development, from infants to adults. Disaster education and literacy in the family environment is an informal form. Children experience rapid memory development and strong memory [8]. Therefore, children before entering the formal school period is a valuable moment to instill the character of empathy, sympathy, wisdom, and concern for others.

In the beginning, Indonesia's social condition is the most generous country in the world. As a small example, disaster education can be done by giving examples to children that helping other people (e.g., friends) affected by disaster is the character of disaster education. In this case, it is suitable for parents to be an example or role model for their children by guiding each other to create a sense of caring for humans, animals, plants, and the environment. Characters that can be instilled, for example, invite children to sow plants or raise animals to form a bond between the child and the plant or animal. In addition to bonding, there will also be a responsibility that plants and animals, if not cared for, will wither and even die.

Regarding disaster literacy, children are invited to get to know the beauty of the universe and its contents through color pictures, video shows, or telling bedtime stories about disasters at the most superficial level. The literacy content can be given about the realm of introduction to nature and its phenomena, for example, the shape of mountains, rain, seas, landslides, tsunamis, etc. Thus, children get a concept by adding vocabulary about disasters in a simple form. Embedding the basic concept of disaster in the family realm is the foundation for further education through formal education. Disaster education and literacy in the family environment should use local languages and examples of local wisdom to be easier to understand while preserving local culture. Disaster education and literacy in this environment are milestones in forming affective (attitude) rather than cognitive and psychomotor which will be emphasized in formal education. As in the previous section, sometimes an individual is born into a less favorable family economically or in less-than-perfect circumstances. To overcome this, extra

work and support from families, schools, and communities are needed to overcome these obstacles.

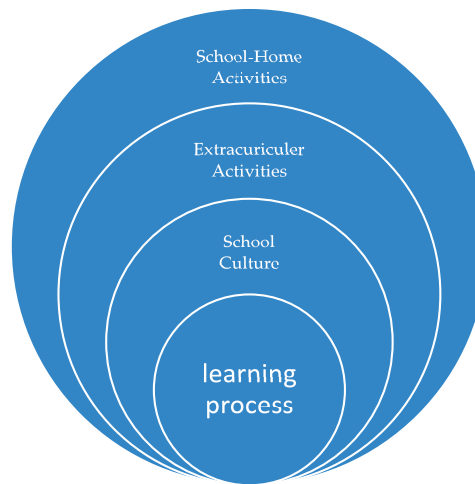
The realization of disaster education and literacy in the family environment can be included in the Disaster Resilient Family (Katana) program, which is part of the Village Toughness Disaster (Destana). Five aspects come with a concentration in Katana, namely recognizing disaster risks in the family environment, building disaster-safe houses, preparing disaster preparedness plans, preparing early warning information, and conducting evacuation simulations. Concerning recognizing disaster risks in their environment, families need to carry out disaster literacy by observing the potential threats of disasters. This potential is then shared with other family members so that between family members, others understand the risk of disaster that may befall them. When you know the type of risk disaster which exists, the family needs to do action mitigation structurally by building a disaster-safe house, both in terms of the physical structure and the layout of the furniture it has, so as not to endanger it.

After literacy efforts on disaster risks or threats and physical mitigation have been carried out, family members need to develop a disaster preparedness plan. They make scenarios as if a disaster has occurred and actions must be taken. They also need to prepare disaster preparedness bags containing supplies and supplies that can be carried quickly, such as durable food, flashlights, security, whistles, and other supplies that are deemed necessary. In addition, building preparedness can also be done with access to disaster early warnings in local media such as kentongan or digital apps that can be accessed via cell phones. Finally, the scenarios created are simulated periodically to form responsive actions and become intuitions in everyday life.

### **3.3. Education and Literacy Disaster in School Environment**

Disaster education and literacy in the school environment are primarily the responsibility of the Government or local Government. A school is where individuals develop by formally interacting with friends and teachers. Considering that Indonesia has a high-scale disaster threat potential in the world, the Government should integrate disaster knowledge through a curriculum embodied in teaching and learning activities (KBM) or regular practice to become a school culture. The integration of disaster education in the curriculum can be in the form of subject payload related local to disasters. In addition to local content, subjects such as geography and language in Indonesia need also given ingredient reading about disasters. Extracurricular activities, such as scouts and youth red cross (PMR), can be an event for disaster socialization. In the school environment,

children are taught about examples of disaster hazards that are around them first and how to prevent these disasters from turning into disasters. For example, the behavior of littering can cause flooding. These models of integration of education and disaster literacy are included in the design of character education, which can be illustrated in Figure ??.



**Figure 2:** Education Character Design.

After receiving disaster education in the local context, it needs to be increased to the next level, namely examples of disaster hazards on a national and international scale that are usually not found in the area. In addition to learning in the form of material or cognitive (knowledge), students also need to be trained in their skills (psychomotor) in dealing with certain disasters, such as earthquakes. The teacher, as a pioneer in training students, starts by recognizing the signs of a disaster event, such as a swaying chandelier and falling/shaky glasses, then recognizing it as a sign of an earthquake so that students take shelter under a sturdy bench/table or to a field far from the ground—tall building.

Meanwhile, disaster literacy can be done in the school environment is to provide reading material about disaster hazards in the form of books, videos, or other interactive media. The planting of vocabulary in the school environment includes a higher level, namely using a second language ( Indonesian ) and a third language (English), because Indonesia is multilingual. In addition, seeing future developments in the use of smartphones to become dominant and owned by students, the teacher provides an understanding of ways to filter the news they get to avoid hoaxing information. The teacher, as a facilitator, can invite students to take advantage of smartphones to install disaster applications such as InaRISK from BNPB or BMKG Info as an introduction to potential disaster hazards in the vicinity and an early warning system through these

applications. When students have an in-depth understanding of disasters, they are encouraged to share this knowledge with their family, friends, and society. Disaster education and literacy in schools should apply the Disaster Safe Education Unit (SPAB) model pioneered by BNPB so that children can recognize the disaster management system in the school environment.

The policy regarding SPAB has received a positive response with the issuance of Permendikbud Number 33 of 2019. In this regulation, SPAB is interpreted as a preventive and responsive effort to the impact of disasters on all lines, levels, and education units. The scope of SPAB covers three cycles in a disaster, namely pre-disaster, emergency response, and post-disaster. Regarding disaster risk reduction, disaster-safe schools are educational communities that understand disaster risk, have plans for all disaster cycles, and have preparedness, all three of which are formed through disaster education and literacy. Three aspects of safe schools are disaster-safe facilities or infrastructure, the existence of disaster management organizations, and disaster risk education efforts [9]. All efforts to reduce disaster risk will be more successful if the concept can be widely applied in certain schools and throughout the country.

### 3.4. Education and Literacy Disaster in Community

Education and literacy in the community are essential in the family and school environment. Humans are social creatures who cannot live alone, so they need others in various aspects of life. The community environment is essential for socializing, especially with the people around the individual. Disaster knowledge that children gain when they are in the family and school environment can be transferred to the community in general through social activities, such as youth organizations. Karang Taruna is a community organization that can be a pioneer in disseminating disaster knowledge. In the community, they can work together to deal with disasters on a micro scale, for example, cleaning waterways full of garbage so that it can cause flooding if ignored. Disaster education in the community can also be in the form of raising humanitarian funds for other areas that are being hit by disasters because the Indonesian people are sociologically generous. Village officials (Kades), community units (RW), and neighborhood units (RT) are actors in disaster management at the micro level. With this activity, the community is invited to recognize disaster hazards in their environment, create an early warning system (e.g., disaster patrols), and provide continuous or sustainable disaster management training.

Community disaster literacy can be realized through installing and socializing signs or board warning about disaster threats or disasters. In addition, they work together to protect nature and the surrounding area so that it remains beautiful to prevent disasters from occurring, for example, not cutting down the surrounding forest (especially landslide-prone areas) indiscriminately because it can cause disasters. The Regional Disaster Management Agency (BPBD) should coordinate with the community by conducting socialization and disaster training so that the community will understand and build its capacity if a disaster occurs. BPBD also needs to monitor and disseminate information regularly to communities that have the potential to be affected by disasters so that they can be evacuated before a disaster occurs. Vulnerable groups, such as the economically disadvantaged, the elderly, women, children, and people with disabilities, also need more attention. BPBD has a big responsibility in disaster risk reduction at all stages of the disaster management cycle, under the mandate of BNPB Perka No. 3 of 2008.

Disaster education and literacy efforts in the community refer to the Disaster Resilient Village (Destana) model. Perka BNPB Number 1 of 2012 explains that Destana has a goal so villages, wards, hamlets, RWs, and RTs can adapt and deal with disaster threats independently. In addition, if a disaster has happened to them, it is hoped that they can recover quickly from the negative impact of the disaster, of course, with their efforts. Through the provision of education and literacy that has been obtained, every community member can handle disaster risk, starting from the assessment stage to evaluation. Disaster risk reduction efforts are excellent if they use their resources, knowledge, and local wisdom. Through these cultural efforts, it is hoped that the goals of Destana can be achieved and its sustainability can be guaranteed.

### **3.5. Disaster Education and Literacy in a Multistakeholder Education Framework**

The combination of the three environments in Multistakeholder Education is a mutually supportive and inseparable unit. If applied with commitment and earnestness, all concepts contained in disaster education and literacy in the family, school, and community environment will form a disaster-resilient generation. The disaster-resilient generation has four aspects of resilience: anticipation, protection, adaptation, and resilience [10]. Anticipation power can be assessed from the knowledge of the community, both theoretical and scientific concepts, and the cultural understanding of the community in the form of local culture. Observation of protective power can



be done by looking at the community's ability to ward off or avoid disasters through structural and non-structural mitigation efforts.

Adaptability can be traced by looking at the ability of the community to change their attitudes and behavior due to the influence of repeated internal and external disaster events. Meanwhile, resilience can be described through the community's ability to restore their lives and welfare in the aftermath of a disaster. All resilient forces, if their capacity is formed through disaster education and literacy, especially within the framework of Multi-stakeholder Education, a Disaster Resilient Generation can be created. Thus, the many threats of disasters in Indonesia are not something to be regretted but serve as a challenge to continually rise and rise in the face of disasters.

#### 4. Conclusion

Based on the Multistakeholder Education framework, the discussion about education and Disaster literacy is also translated into three sub-chapters: the family, school, and community. The family is the primary environment in individual child development, from infants to adults. Disaster education and literacy in the family environment is an informal form. Education and literacy in the school environment are primarily the responsibility of the Government or local Government. A school is where individuals develop by formally interacting with friends and teachers. The community environment is essential for socializing, especially with the people around the individual. Disaster knowledge that children gain when they are in the family and school environment can be transferred to the community in general through social activities, such as youth organizations.

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