

Tsunami Disaster Risk Perception and Knowledge among Children: The Board Game Activities

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1. INTRODUCTION

The United Nations Office for Disaster Risk Reduction (UNDRR), defines a disaster as a severe disruption of the functioning of a community or a society at any scale due to hazardous events interacting with conditions of exposure, vulnerability and capacity, leading to one or more of the following: human, material, economic and environmental losses and impacts [1], which mean as the overall of the disaster in the part of definition needs to have the victims or the damage of the property to make the hazard itself turn to be the disaster.

The disaster risk perception of the community has several contexts of studies. Some of the research has the idea to compare the area with the higher rate of disaster that made the community members have a higher rate of risk perception. Other research focused on how education in the knowledge of disasters in the study area impacts the disaster risk perception of the study group [2]. The results found that the relationship of the influence to the community member is different due to the other of the selected activities. Yildiz et al. [3] focused on the students' disaster risk perception in different countries and found the factors that made each country's students have different perceptions. Those factors include the country-specific objective risks, the hazard-prone, socio-economic status, and proactive actions in the hazard occurrence. The theory aims to create local disaster management, the basis of the development that started with local knowledge [4].

Moreover, developing the risk perception to meet disaster management also needs the disaster experience, risk perception, mutual understanding, stakeholders' collaboration, and readiness from the community. As a result, there is the conclusion that there is still room for enhancing the student's and community's children's disaster risk perception in the future. To be the supporting part of increasing the community disaster

capacity. In line with the risk equation, increasing capacity explicitly impacts the overall risk level. The project "Tsunami Hazard Evaluation in Thailand and Tsunami Evacuation Simulation for Identifying Effective Disaster Risk Reduction Measures" has its purpose in the 2nd year of the project to communicate the knowledge and conduct the activities in the selected area. As the purpose of the knowledge contribution during the first year of the project, the development of board games has been conducted under the context of Thailand, especially in the research area of Phuket Province. The first exhibition was arranged at Baan Sai Nam Yen School, Patong District, Phuket Province. It is located in a tsunami-prone area. According to the information from the local administration, the school members are invited to join in the annual tsunami evacuation drill. The drill is organized by the local administration and the related government agencies. Thus, this gave the students the fundamental knowledge about the tsunami disaster.

There were three developed board games in the exhibition. The board games include the game of "Backpacking" (i.e., drafting cards to select the appropriate item to bring with the person to the evacuation site during the disaster period). The next game is the game called "How high should it be?" (i.e., selecting the suitable building to evacuate after the tsunami alarm. The last game is "Signage," (i.e., deciding the evacuation route using the evacuation sign placed on the game board).

This paper aims to show the different questionnaire results related to the tsunami evacuation before and after the exhibition's activities. The questionnaire results would show the others of the evacuation idea and perception from the board voting scores.

2. FINDINGS

The risk perception of the disaster and knowledge of the disaster were reviewed using the previous literature. The board

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game activity has the part to fill the gap of enhancing the disaster risk perception and the knowledge of disaster survival protocol.

The study and operation area is Phuket Province, Thailand. As part of the exhibition activity, the team organized it at Baan Sai Nam Yen School, Patong District, Phuket Province. The participants consist of 100 local students Grade 1 – Grade 9. The exhibition activities included a lecture from the instructor about the knowledge of tsunamis, mini activities (i.e., question and answer with the game), VR simulations, and board games. The participants were encouraged to join all activities during the whole duration to join freely.

The part of the questionnaire result is shown in Table 1. The questions contain the part of the evacuation site selection, the evacuation route, the evacuation vehicle selection, and the timing of the evacuation preparation.

Table 1. The results of the questionnaire survey.

Questions	Before (%)	After (%)	Diff.
Selection of the Evacuation Site			
- Tsunami evacuation site in 1 kilometer.	4.11	3.42	-1.58
- Building higher than 4 floors within 1 kilometer.	49.32	67.52	18.21
- Evacuation site in the distance 1-2 kilometers, out of prone area.	44.52	23.08	-21.44
- Open area further than 2 kilometers without the accommodation.	2.05	5.98	3.93

The finding indicates that the different activities impact knowledge, experiences, and perception differently. According to the previous literature review about enhancing disaster risk perception, this activity also proves the idea and the demonstration of the findings that could affect the student's perception.

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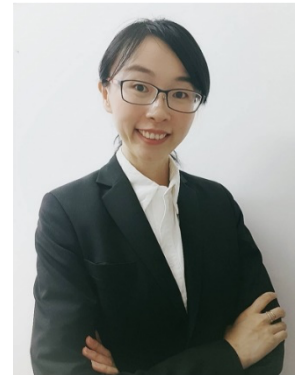
research on people's perception of tsunami evacuation.

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