

# RAISING THE COMMUNITY'S AWARENESS OF DISASTER THROUGH THE BOARD GAMES: A REVIEW

**K. KRUTPHONG<sup>1</sup>, W. TREERANURAT<sup>2</sup>, A. LAOSUNTHARA<sup>1</sup>, N. LEELAWAT<sup>3,4</sup>,  
J. TANG<sup>5,6</sup>, N. TRUMIKABORWORN<sup>7</sup>, and P. LATCHAROTE<sup>8,9</sup>**

<sup>1</sup> *Research Assistant, Disaster and Risk Management Information Systems Research Unit,  
Chulalongkorn University, Bangkok, Thailand*

<sup>2</sup> *Graduate Student, Department of Industrial Engineering, Faculty of Engineering,  
Chulalongkorn University, Bangkok, Thailand*

<sup>3</sup> *Associate Professor, Department of Industrial Engineering, Faculty of Engineering,  
Chulalongkorn University, Bangkok, Thailand*

<sup>4</sup> *Head, Disaster and Risk Management Information Systems Research Unit,  
Chulalongkorn University, Bangkok, Thailand*

<sup>5</sup> *Lecturer, International School of Engineering, Faculty of Engineering,  
Chulalongkorn University, Bangkok, Thailand*

<sup>6</sup> *Member, Disaster and Risk Management Information Systems Research Unit,  
Chulalongkorn University, Bangkok, Thailand*

<sup>7</sup> *Graduate Student, Asian Institute of Technology, Pathum Thani, Thailand*

<sup>8</sup> *Assistant Professor, Department of Civil and Environmental Engineering, Faculty of Engineering,  
Mahidol University, Nakhon Pathom, Thailand*

<sup>9</sup> *Deputy Director, Institute for Technology and Innovation Management, Mahidol University, Nakhon Pathom, Thailand  
Correspond to N. LEELAWAT (natt.l@chula.ac.th, n.leelawat@gmail.com)*

**Keywords:** Board Games, Community's Awareness, Disaster Education, Innovation, Review

## 1. INTRODUCTION

The national government and international organizations are focusing on disaster risk reduction. Due to the damage from repeated disasters, especially in the prone areas, risk perception among the community is needed. In addition, the disaster risk perception among the community and residents requires activities and materials of disaster education to create and maintain this perception [1]. The severity of the situation is not only influenced by just hazard itself, but the community's vulnerability is also a vital factor that generates the size of the loss. Therefore, the community's perception of the disaster risk can be an essential part of the preparedness activities [2-3]. Thus, the action to raise community awareness is significant to be implemented.

This review aims to explore the related innovations and activities to create disaster risk perception. Accordingly, the methodology starts with data collection of related innovations and activities for disaster education and/or disaster understanding of the disaster. Moreover, this review also summarized the comparison of materials using a checklist of the relevant development factors and the use of materials.

## 2. RESEARCH FINDINGS

This study begins with the basic knowledge and the expert experience needed to give to the community through the materials from the idea of serious game development [4]. The budget and development time also need to be considered. The last group of potential factors is the ability to create the perception and the frequency of use. The frequency of use needs to be counted because the

community awareness or perception of that disaster might decrease over time [5].

## 3. CONCLUSIONS

This review is not a document for deciding which of the materials/methods has the highest score or the best materials to use with the community. Nevertheless, the information and basic comparison can help the developers or people interested in raising awareness or creating the perception of the disaster risk in the community to choose the appropriate one with their objective and context.

The focus of this review is to find the appropriate materials to use with the students and the grown-up community members to create awareness and perception of disaster risk preparedness, including other phases of disaster management.

## REFERENCES

- [1] X. Wang, L. Peng, K. Huang, W. Deng, *Int. J. Disaster Risk Reduct.* 71 (2022) 102795.
- [2] A. Iizuka, *Prog. Disaster Sci.* 15 (2022) 100239.
- [3] K. Xue, S. Cao, Y. Liu, D. Xu, S. Liu, *Habitat Int.* 127 (2022) 102646.
- [4] M.H. Tsai, Y.L. Chang, J.S. Shiao, S.M. Wang, *Int. J. Disaster Risk Reduct.* 43 (2020) 101393.
- [5] A. Amri, J.A. Lassa, Y. Tebe, N.R. Hanifa, J. Kumar, S. Sagala, *Int. J. Disaster Risk Reduct.* 73 (2022) 102860.