

# Rethinking Disaster Prevention Design: Educating the Public Using Narrative-Based Simulation

Sunwoo Kang\*, Myeong Ah Han\*\*

\*Korea University of Technology and Education  
LMN Communications Institute, Republic of Korea

\*\*Catholic University of Korea, Republic of Korea

## ABSTRACT

The vast majority of the disaster prevention design research in Korea has focused on the macro-level interventions such as examining the existing systems and approaches, instituting revised policies, systematically establishing intervention programs, and evaluating the effectiveness of the interventions. However, little has focused on systematically challenging individuals' awareness using micro-level intervention. The present paper introduces approaches to micro-level intervention by infusing narrative-based simulation, and further suggests the implications on balancing the approaches of both micro-level and macro-level interventions.

Keywords : prevention research design, raising collective awareness, narrative-based simulation

## 1. Introduction

Many studies on disaster prevention design in Korea have focused on the role of computer based simulation, the effects of different forms educative prevention programs, and the consequences of disaster on the individuals and the society. In natural disaster such as earth quake, tsunami, landslide, or flooding, studies have focused on how many variant forms of disaster occur or how quickly the cause of disaster affects the ecological environment. For example, studies on earthquake and tsunami examined the waveforms of tsunami that earthquake could cause. Even though the benefits of using both micro-level prevention exist in disaster prevention studies, the merits of narrative-based prevention have not been recognized in the area of micro-level prevention. In the present paper, the authors introduce the role of narrative-based simulation, and how it could be utilized in designing prevention programs in micro level prevention.

## 2. Literature Review

Studies that examined designing prevention programs primarily focused on different forms of disasters, how severe the consequences were, and ways to designing disaster prevention education programs [1], [2], [3].

Some of the disaster prevention studies involved area or target specific trainings [4] [5] [6] [7]. The type of disaster prevention programs that have been designed and used specifically focused on ways to coping with hypothetical or simulated natural disasters and hazards [8], [9], [10], [11], [12]. The prevention programs have also focused on educating the public on the cause and the consequence of the disasters and the hazards with scenario based stories, cartoons, and computer based programs [13], [14], [15], [16]. However, the fundamentally less acknowledged approach is the narrative based prevention which is fairly commonly and widely used in designing disaster prevention programs in micro-level in the world.

## 3. Narrative-based Prevention

Narratives are powerful tools in designing prevention programs as it is used with simulated approaches. Studies in various fields have emphasized the use of real-world cases as they are used in much more persuasive manners. Narrative based prevention programs particularly address the decision errors that humans made and how individuals could have made the decision differently[17], [18], [19]

In cognitive psychology, the theory of narrative thinking is used to examine the effects and the process

of individuals' decision making [20], [21].

Micro-level prevention involves challenging one's awareness and raising one's awareness on the issues that need to be affected. Unlike macro-level prevention, such as changing and reinstating policies regarding the disaster prevention, micro-level prevention involves helping individuals cognitively and affectively mindful of the issues that need to be readdressed. In narrative-based prevention frequently challenge individuals cognitively and mentally. In the finalized paper, the need and the importance of challenging individuals using narrative based prevention in micro-level will be introduced, and the need to adopt narrative based prevention design will be also addressed.

#### 4. Narrative-based Prevention

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