DEVELOPMENT OF HIGH RISE BUILDING FIRE EMERGENCY EDUCATIONAL GAME

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Abstract

Fire in high rise building holds a significant threat to human lives, especially for those who live and doing daily activities in high rise building. In a crowded environment, it has been observed that most victims were injured or killed by the so-called non-adaptive behaviors of the crowd, rather than the actual cause of the disaster. To avoid this condition, a standard evacuation procedure on high rise building should not only become any regular information, but also a well-trained tacit knowledge. One of the common solutions to transfer this knowledge is by conducting evacuation drill. However, evacuation drill has their own downside, which is tenant losses and lack of reality. Based on those problems, this research aims to create a viable alternative by developing an emergency educational game in the event of fire in high rise building that consider human behavior and standard evacuation procedure.

This research starts with requirement gathering phase, which was conducted to create the ideal configuration of the game, continued by functional design to create the game scenario, scoring system and also evaluation system. The next phase is initial interface design, which is the software development phase. After the software is completed, the next phase is usability analysis using heuristic evaluation and the last phase is evaluation and suggestion for the future works.
The result of this research is a fire emergency educational game which considers human behavior and standard evacuation procedure. According to usability analysis, it was found that the game has low score on the clarity of game play and high score on match with real world, contribution to fire emergency problem and clarity of game evaluation.

Keywords: Fire, High Rise Building, Educational Game, Human Behavior, Standard Evacuation Procedure, Heuristic Evaluation