

Educational materials for disaster prevention: Development and evaluation of Disaster Mitigation Action Card Game

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1. Introduction

When educational materials for disaster prevention are roughly divided, there are two types. One is the "Have Answer" type whose objective is to give participants knowledge of disaster prevention. The other is the "Have No Answer" type whose purpose is to get them to think what to do when a disaster happens. Now, "Have No Answer" type is desired in terms of education for disaster prevention because participants can think about disaster prevention voluntarily. Therefore we developed a new tool of "Have No Answer" type, "Disaster Mitigation Action Card Game", that elementary and junior high school students can participate. Moreover we evaluated this game by questionnaires.

2. Disaster Mitigation Action Card Game

The rule of this game is easy and similar to a rule of "karuta", but the character isn't written on the cards. They have only the picture which shows an "immediate" behavior when a disaster happens. Additionally, not only one player can put up a card but also all players can do. The run of this game is as follows. 1) Players make a circle by a group of 2-7 people and arrange cards discretely in the circle and a facilitator enters each group. 2) A question sentence, for instance "You're in the classroom at school now. You felt seismic tremor. What do you do?", is read and players take a card within 3 seconds. 3) Within 30 seconds, the player explains the reason why he/she chose the card. 4) When all the players approve his/her explanation, the player can get one point. On the other hand, when other player's opinions about the explanation are divided, they argue it. In this case, the facilitator judges the score. 5) Players return cards to the field. 6) The facilitator explains a point of the question. 2)-6) is repeated. 7) Disaster prevention mini leader authorization ceremony is performed.

3. The feature of the game

This game has the following big features. (1) Players can train an "immediate" decision when a disaster happens, (2) Players can realize and share the risks which they imagine when a disaster happens through discussing them with other players and (3) This game can be conducted in other countries because of universal design.

In terms of (1), by limited 3 seconds, players are required to think "immediately" what to do in the question's situation. So it's expected for them to acquire an "immediate" decision of the various situations by playing this card game repeatedly. In regard to (2), card's picture is so simple and abstract that player's answers depend on player's situation they imagine. Therefore, the more situations players guess, the more risks they can share and realize. In relation to (3), cards have only the pictogram which shows an "immediate" action at the time of an accident. So this game can be played in other countries by adapting it to foreign language and environment.

4. The evaluation of the game

In each event, we carried out a questionnaire and evaluated this game. Questionnaire items include degree of interest, attractiveness, participant's consciousness and so on. According to the results of the questionnaire, more than 80 percent of participants answered that this game is fun, the rule is clear, and they want to play one more time. Moreover, nearly 90 percent of them answered that they want to know more about how to protect themselves when a disaster happens. In fact, we got high evaluation for this game.

5. Future's view

We are preparing the manual of "Disaster Mitigation Action Card Game" to expand use of this game. In addition, high school students can serve as a facilitator so we consider the possibility of the education for elementary school and junior high school students by high school students.

Furthermore, we have done only this game's evaluation. The purpose of this game is to make participants think about what they should do when a disaster happens and train the ability to protect oneself. Therefore we will measure the participant's ability

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change through this game.

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