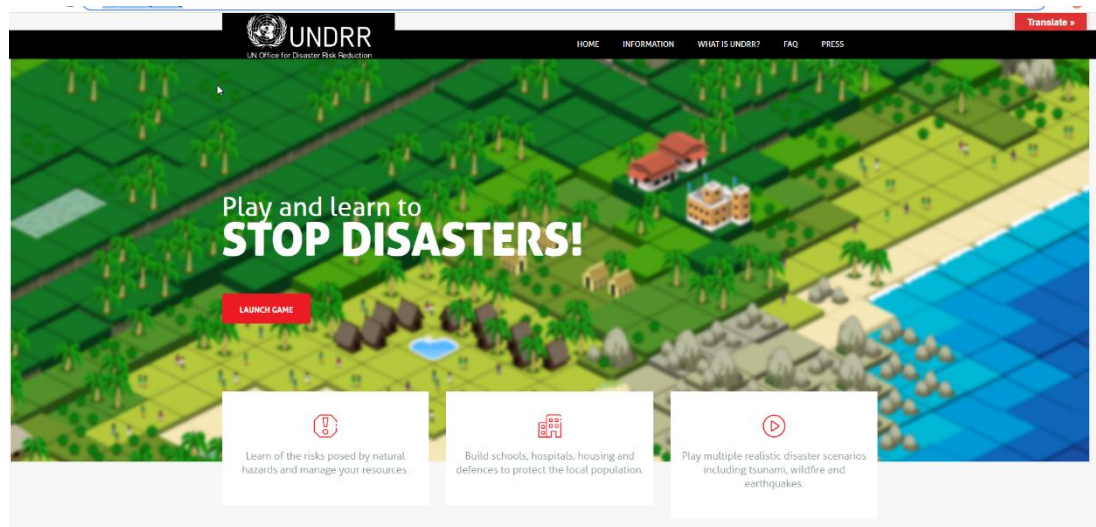


Assignment 3 – Stop Disasters! - Digital Game Evaluation

I am an experienced emergency manager, having taught emergency management training to senior officials across Canada for many years. My passion is watching knowledge transformation occur in seasoned emergency management professionals, during a disaster simulation exercise, and the accomplishment of managing a simulated disaster with limited information.

For the purposes of this assignment, I chose to assess a digital game by the United Nations Office of Disaster Risk Reduction (UNDRR) entitled, Stop Disasters!



<https://www.undrr.org/publication/stop-disasters-disaster-simulation-game>. It is a free game that is easily accessible to everyone with a computer and Internet access. To access the game https://www.stopdisastersgame.org/stop_disasters/.

Edutainment is a term used to describe educational games marrying education and entertaining (Albar, 2014). Stop Disasters provided enough edutainment for me to pursue playing it and evaluate it. It is a game assesses decision-making skills, resource management, and working under pressure. This online video game was initially designed to teach young people about risks posed by natural hazards in communities, and how to manage the resources. It is a serious educational game, with the target population originally designed towards 9–16-year-old children, however it has since been adopted around the world for prevention and mitigation training for adult learners.

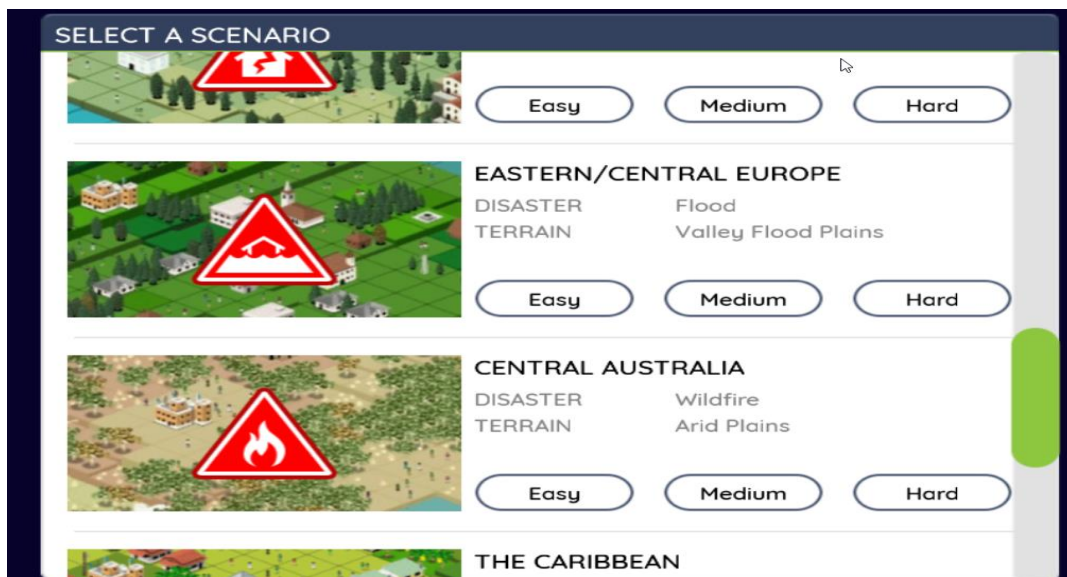
The creator of the game is Playerthree and in researching the game I discovered that they hope to create other versions and case studies for specific geographical areas (UNISDR, 2014, p. 3). The game is intended for players to learn about disaster prevention, and mitigation strategies, for natural disasters



(as opposed to human-caused disasters, such as acts of terrorism; bombs, chemical, biological, and nuclear). There are three levels: easy, medium, and hard. It can be played individually

or in a team. There are five hazard scenarios; tsunami, hurricane, earthquake, floods, and wildfire, located in five geographical locations throughout the world.

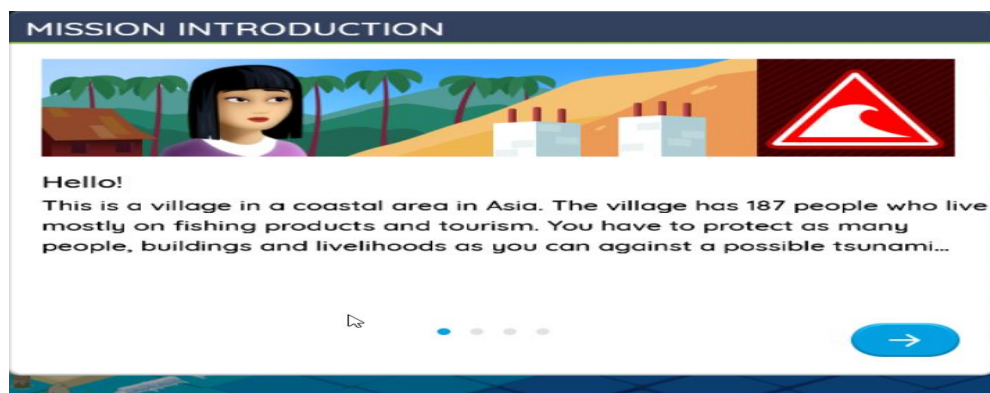
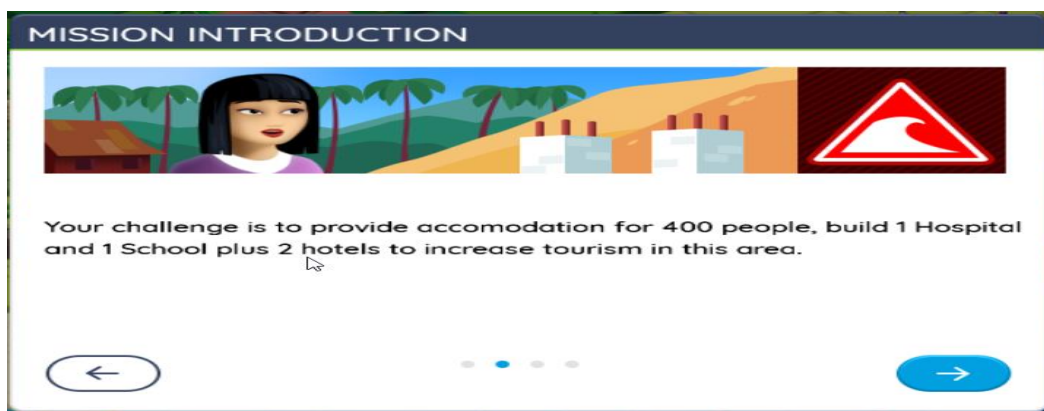
Players choose the hazard, and the level, and have 15-20 minutes to prepare the community before the hazard occurs. The tasks of the game are to build housing, schools, hospitals, and community centres, ensuring that they are all structurally sound, for the pending hazard in that community.



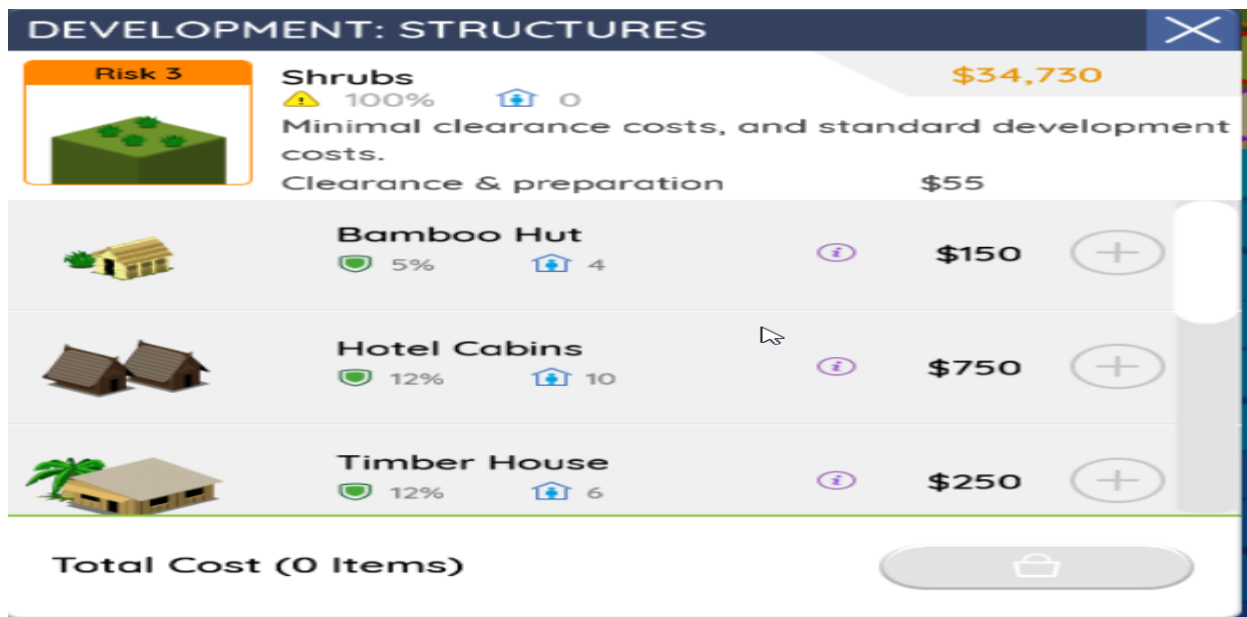
Additional elements within the game are a budget to work with, which decreases based on the skills level. The players are given a budget (which decreased upon on the skills level) to build and upgrade the

infrastructure for the housing projects, schools, hospitals, and community centres, and invest in early warning systems, educational workshops, and construction of flood defense systems. Population numbers (which increase based on skill level); unhoused, housed, and sheltered are provided. These numbers decrease as you build homes, and shelters.

The limitations to the game are the storytelling scenario in the beginning of the game, it does not provide enough information or additional resources to read while playing it, or after they finish playing the game.



Players assess risk levels in the community, although I found it limiting when I tried to build in low-risk level areas and are shown information about the probability of mitigation and prevention efforts, survival rates, and are assessed by how well the community survived (people and buildings) after the disaster. Players either pass or fail, if players fail players are given the opportunity to replay the game.



What is the age group/position of the learners?

There are two distinct user groups: children ages 9-16 as part of a geography and/or social studies program; and emergency managers (adults) who are specializing in disaster risk reduction (DRR). Neither group fits under the profile of a typical gamer, but since this game is designed to be a serious game for educational purposes, they are not the intended target audience.

How can it benefit emergency managers?

This game benefits emergency managers to learn how to make quick decisions about prevention and mitigation strategies, based on limited information, with some details (budget, population, risk level of the area).

The game addresses five different natural disasters; tsunami, hurricane, earthquake, floods, and wildfire. It provides emergency managers with the ability to look at the community from those lenses. Although, emergency plans are typically built on an all-hazards approach, there will be special contingency plans for unique situations (i.e., terrain and unique environmental risks).

Is it appropriate for emergency management training?

Disaster risk reduction is divided into three categories: prevention, mitigation, and preparedness/evacuation planning. Stop Disasters incorporates all three elements, although it does go into evacuation planning in any detail. The content of the game includes the use of manmade structures, land use regulation, basic need and service provisions, engineering design, engineering techniques/hazard resistant construction, public awareness, disaster risk analysis, early warning systems, coordinated evacuation, emergency operations, public information, and training and field exercises. It does not include environmental policies, or stockpiling equipment and supplies (Gaillard & Gampell, 2016, p. 299). Therefore, I conclude that it is appropriate for EM training.

How does this game relate to the Gee's learning principles (2003)?

Risk-taking:

There is a strong element of risk taking in the game as players are encouraged to take risks, try new things, and explore rebuilding a disaster-prone area. In Stop Disasters, like in all games, no one gets hurt and failure is a good learning opportunity.

Agency:

Players are encouraged to take control of the area, the budget, house people, and develop the community. As such, there is a strong sense of ownership.

System thinking:

There are repetitive activities that help the players build on. For example, if you are building homes, you would then click on upgrading the infrastructure of the home, repeating the process each time. Also, players must think about the decisions that they make and how they have affected the people in the community.

Pleasantly frustrating:

The game is doable and motivating for players to continue to play it even after failing it. It challenges the players by not allowing you to build where you want to, so that you must think through the risk level in the community. Conversely, I found it more than pleasantly frustrating, I had to work at the easy level and repeat the games quite a few times until I got the hang of it.

Elements for an ideal disaster education game:

Findlay (2017) outlines the elements for an ideal disaster education game, I have evaluated the Stop Disasters game based on these elements.

Reality-based:

It is very closely based on the reality of the five different natural disasters, although the maps of the areas are small and made it hard for me to get a true measure of the scope of the terrain. As Gee

(2005) states, games provide an opportunity for learners to role play. This is especially true in a competency-based learning environment like disaster risk reduction where rapid decision-making is an essential competency in disaster risk reduction. Gampell & Gaillard (2016) state that disasters should not be separated from everyday life. The Stop Disasters game gives the learners an opportunity to see how the disasters would impact a community and hopefully relate it to their own community.

Story-based:

The story about each of the scenarios could have been longer, or given throughout the game as latest information came in. The level of engagement is fair, however it intrigued me to try out each of the five disaster scenarios. I started out thinking that I would play at a hard level, and quickly realized that I need to play at the easy level. We learn by doing and the more practice that we do the better that we get, and learners need to engage in all stages and repeat the required tasks to a number of times before getting the proper final outcome (Albar, 2014). I do not know if people would be interested enough to go back and repeat the game without some type of teaching for them to understand why they need to mitigate and prevent the disasters. There is also a false sense of security that the game gives to people by lessening the vulnerabilities that everyone faces during natural disaster.

Stealth learning:

There is not enough time to play each game thoroughly and gain that level of repetition before the natural disaster occurred. I would have preferred to have 30 minutes to play it with pop up tips and hints throughout (such as, are you sure you want to build a hotel here?).

Age-appropriate:

I imagine that younger players would find the game fun to play. The time pressure would not be too hard for them as they are used to maneuvering around video games. For adult learners, I think that it would take them longer than the 15-20 minutes to master the game. However, it gives adults the opportunity to fail and try again.

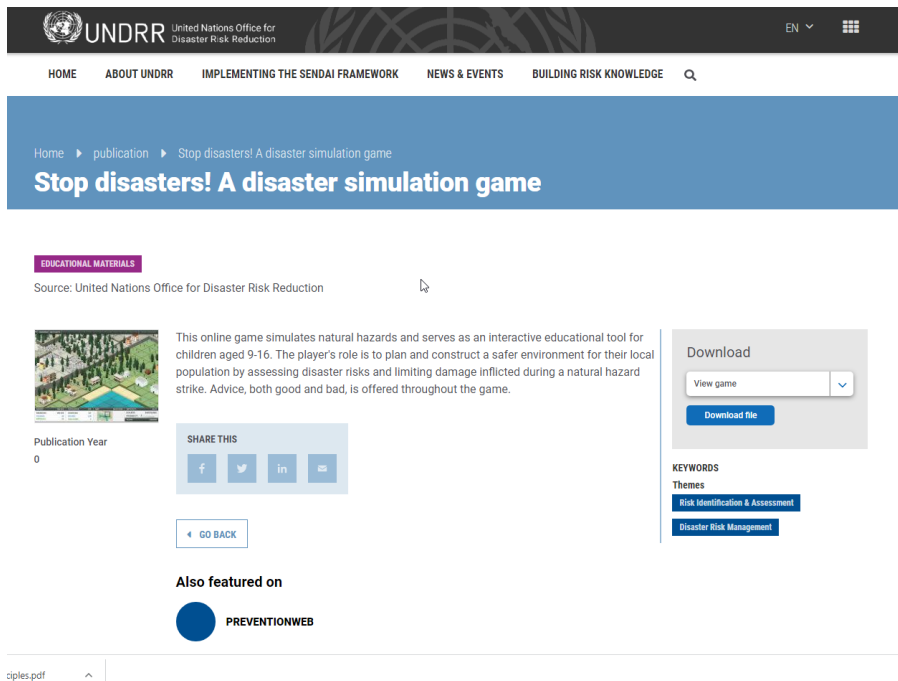
Provide feedback:

There is a small component of feedback provided throughout the game and afterwards, although I would have liked to have seen more of that. How an average person’s life is structured determines their vulnerability in facing a natural disaster (Gampell & Gaillard, 2016). The game missed an excellent opportunity to provide feedback throughout the game.

Valid educational lessons:

On this point it does not fully meet the mark and meet the criteria of the Knowledge Framework (Findlay, 2017), which was created by the International Federation of the Red Cross with a structured educational process. As an additional point, the teacher or facilitator leading the Stop Disaster session needs to fully understand each level of the game and each scenario because there is not a help feature in the game to answer learners’ questions.

The UNDRR would benefit from adding a reading, or a lesson, on the webpage where the game is located, and incorporate a lessons-learned, or links to lessons-learned reports, in a resources section for people who would like to delve deeper into prevention and mitigation strategies.



In conclusion, based on Findlay's criteria, and Gee's principles, I have given the game a seven out of ten. As Meesters and van de Walle (2013) state learning experiences should be aimed at changing behaviour. This game provided me with an opportunity to play a disaster risk reduction game and assess it, but I do not believe that it changed my behaviour. A further teaching on evacuation planning, or links to articles would be a wonderful addition to their website.

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