

Observe an approaching tsunami from a bird's eye view. Experience evacuation from the perspective of evacuees.



Disaster Preparedness
XR
Education DX

Disaster Preparedness Education with Digital Tools

We support disaster Preparedness education with digital tools.

In Japan, where natural disasters take place often, disaster preparedness education is provided to help people develop the mindset, knowledge, judgment, and ability to take action to protect their lives in the events of the disasters. For people to understand local disaster risks and disaster prevention efforts, field tours, delivery lectures, study sessions, and community events are organized for local residents as well as tourists, climbers, and foreign nationals. Disaster preparedness education is incorporated also into school education, considering the importance of raising awareness of disaster prevention from early childhood.

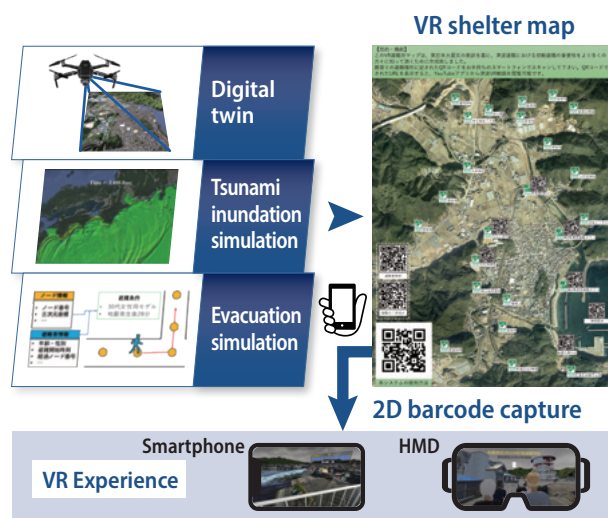
We propose effective digital tools of various kinds for disaster preparedness education and support introduction of these tools.

Featured Technology 1

Experience disasters with XR technology

Recently, Cross Reality (XR) technologies such as Augmented Reality (AR) and Virtual Reality (VR) have attracted attention as effective tools for disaster preparedness education. Experiencing the real world and virtual space in an integrated way develops understanding of disaster prevention measures and ability to respond to disasters.

For example, a digital twin model is a system that can be used as a tsunami countermeasure. By integrating tsunami inundation simulation and evacuation simulation, it visualizes the status of inundation on the evacuation route in VR. This allows people to experience the tsunami evacuation from the perspective of evacuees.



Promote effective disaster preparedness education with various digital tools

Evacuation simulation

Evacuation simulation program simulates and reproduces movements of evacuees on a computer. By changing conditions such as walking speed of evacuees, locations of shelters, and evacuation routes, you can evaluate the process and result of the evacuation.

The evacuation situation at tourist sites in anticipation of an eruption can be grasped.



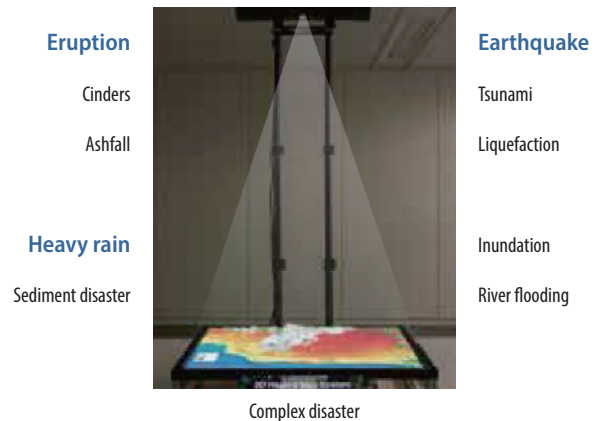
Learning Objectives

- ▶ Identify the bottlenecks during evacuation.
- ▶ Recognize the time limit of evacuation.
- ▶ Identify the locations of shelters.
- ▶ Understand the required amount of emergency stocks.

Projection mapping

Projection mapping projects on 3D models dynamic representation of phenomena that are difficult to grasp on maps and documents. It can also project a hazard map and a simulation result at the same time. The situation is explained using time and space axes, which helps people understand it spatially through visual perception.

The changing disaster situation can be viewed in 3D.



Learning Objectives

- ▶ Understand how natural phenomena and disasters happen.
- ▶ Identify specific disasters in local areas.
- ▶ Recognize how to evacuate when a complex disaster happens.

Disaster preparedness education in school education

Disaster preparedness education in school education is promoted in conjunction with the GIGA School Initiative (Education DX) led by the Ministry of Education, Culture, Sports, Science and Technology.

For example, the existing Disaster Imagination Game (DIG) uses pens and sticky notes to add information to a paper map. Using a tablet and a projector together with video materials and models helps students visualize the situations in 3D, which promotes effective learning.



◀ Conventional DIG



▼ Available now on tablets

EJEC supports disaster preparedness education.

Design the latest disaster preparedness education.

Design the contents according to regional contexts.

Design tools according to learning objectives.

Update existing tools and introduce digital tools.

Produce contents of digital tools.

Produce simulation data, images, and videos.

Produce manuals for staff and school teachers.

Summarize and clarify the flow and points of instruction.