

Digital Storytelling for caldera hazard literacy in Secondary School Students



QuakeCoRE
NZ Centre for Earthquake Resilience
7 - 10 December 2020
Whakatū | Nelson

Sriparna Saha*, Ben Kennedy, Sara Tolbert
*email: Sriparna.saha@pg.canterbury.ac.nz

University of Canterbury, Private bag 4800, Christchurch 8140.

1. Background

- Digital resources with **user-directed outcomes** can successfully teach action-oriented skills relevant for **communication** during a volcanic crisis [1].
- Use of choose your own adventure strategies for understanding physical processes around caldera volcanoes such as Lake Taupō (In Aotearoa) for engagement at **secondary school** level has not been explored fully.
- This study aims to investigate the unique learning moments associated with a **“choose your volcano adventure”** digital narrative and understand how school **location**, individual **experiences**, and **elements** of the resource can influence these moments.

2. Methods

- Use versions of the “Kid who cried Super volcano” in secondary school classrooms.

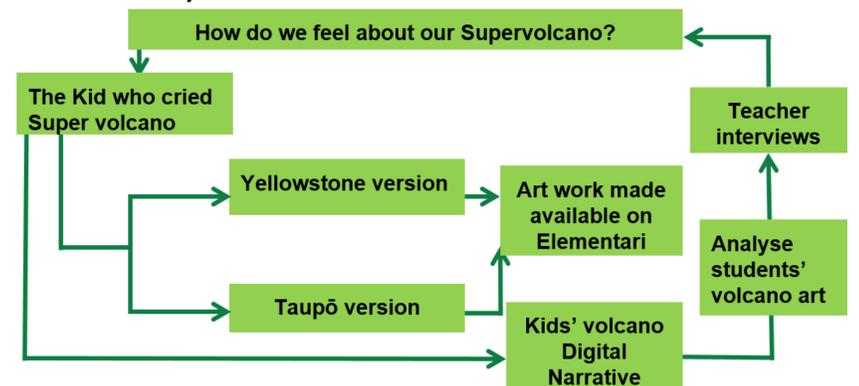


Fig 1: Flowchart depicting the use of the resource “Kid who cried Supervolcano” to identify the unique learning moments linked to it and inform its further design.

- Local versions of the Kid who cried Supervolcano can provide **authentic context** to understand the physical processes related to eruptions.

3. The Kid who cried Supervolcano: The Yellowstone Version

- Ongoing collaborations with locals from Whakawerawera village and later from Taupō will allow **co-construction** of authentic classroom resources.
- A **bicultural** resource representative of local voices can lead to authentic engagement [2]

Intended learning outcomes:

- Super-volcanoes are beautiful but can be dangerous; when visiting follow signs to stay safe.
- Steam, smells, boiling water, and earthquake(unrest) activity is normal for super-volcanoes.
- Small eruptions are possible from super-volcanoes and can be dangerous in our lifetimes.
- Super-eruptions are unlikely in our lifetimes.
- Anyone can be a scientist.
- Understand relationship with the local volcano (for example, Lake Taupō).



Fig 2 (a-c): Snapshots from the Yellowstone version of the Kid Who Cried Supervolcano.

4. Implications

The cultural narratives can be useful for **informed design** of educational resources for understanding volcanic unrest and related processes such as earthquakes and/or tsunamis [2].

References: [1]: Dohaney, J., Brogt, E., Wilson, T., & Kennedy, B. (2018). Using Role-Play to improve Students’ Confidence and Perceptions of Communication in a Simulated Volcanic Crisis. *Vol. Observing* (pp. 691–714)
[2] Kaiser, L., & Boerson, K. (2020) Kura e Tai Āniwhaniwha (schools and tsunami): bi-cultural and student centred tsunami education in Aotearoa New Zealand, *Australian Journal of Emergency Management*, Volume 35, No. 2, April 2020.

Artwork by Elizabeth Mordensky who is a guide at the Yellowstone National Park (U.S.A). The story is written by Ben Kennedy & Sriparna Saha from geologists’ perspective. Cultural supervision for local (Aotearoa) versions by Sylvia Tapuke & Kelvin Tapuke. Ongoing discussions with USGS for publishing the Yellowstone Version of the Kid who cried Supervolcano as an illustrated children’s book are in progress.