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Documenting natural hazard risk communication needs, challenges and innovations through participatory engagement

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Abstract

Engineers often receive limited or no formal training in risk communication and may not have time to be up to date with current communication research. Additionally, communication training of practitioners is often 1-dimensional and recipe-style, and doesn't explore contextual and situational nature of communication. Over the past couple of years, we have developed innovative curricula to teach risk and crisis communication to upper year geoscience, emergency management and engineering students at the University of Canterbury and affiliated institutions in New Zealand. This research involved measuring students' communication performances and building a new model for understanding how communication is learned, resulting in statistically significant improvements of students' perceptions and confidence.

There is considerable experience and innovation within the New Zealand natural hazard risk communication community, so we aim to integrate this knowledge with our research as a 'value add' project (funded by EQC and QuakeCoRE), in which we will work with practitioners to create joint recommendations for improving risk and crisis communication, for the benefit of the wider community.

In this poster, we will share the 'lessons learned' from our communication training experiences, and why they are important for teaching scientists and engineers how to communicate. Additionally, we will highlight some preliminary findings from engaging with professionals and ask the QuakeCoRE community to consider working with us on this important initiative. Lastly, we will highlight the successes and failures of running our knowledge transfer initiative, which is useful for professionals and organisations hoping to improve communication skills in engineering and the sciences.

Risk Communication Lessons

Lesson 1. A holistic and interdisciplinary approach

Understanding and teaching communication requires a holistic approach which incorporates advice from the scholarly literature from many disciplines.

Risk communication occurs in multiple formats: written media releases, radio bulletins, panel discussions and press conferences (students shown here practicing).

Lesson 2. Communication is cultured and contextualised

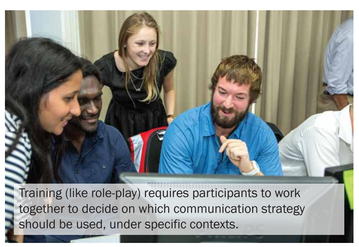
Communication is cultured and highly contextualised. Learning about communication should incorporate social, political, economic and cultural elements.

Lesson 5. Feedback is key

Meaningful feedback is key to improving communication. It allows students to try out new strategies and receive specific feedback in a safe learning environment.

Lesson 6. The value of evaluation and education research

Education research is vital for teaching communication effectively.
Effective practice uses sound pedagogy to build and evaluate communication curricula.



Training (like role-play) requires participants to work together to decide on which communication strategy should be used, under specific contexts.

Lesson 3. Communication is multi-faceted

Communication is multi-faceted (i.e., occurs in multiple formats and styles) and should be carefully considered to match the appropriate situation and information needs of the audiences.

Our research has shown that role-play is effective at improving people's confidence and perceptions of communication in complex scenarios and to different stakeholders (Dohaney et al. 2016).

Lesson 4. Role-play can be used to improve communication perceptions and confidence

Students consider the best course of action after an earthquake has occured in the Communicate the Quake role-play.

Distill Lessons

- Our research specialises in using role-play (e.g., the Volcanic Hazards Simulation; Dohaney et al. 2015 or Communicate the Quake; Dohaney et al. 2016) to teach upper year geoscience students science and risk communication best practice.
- This research involved measuring students' communication using validated measures (i.e., communication confidence (SPCC; McCroskey and McCroskey 1988) and results indicated that role-play increases people's confidence and perceptions of crisis communication (Dohaney et al. 2016).
- We are now implementing a knowledge transfer initiative (funded by EQC and QuakeCoRE) which brings the lessons from this ongoing research to practitioners.

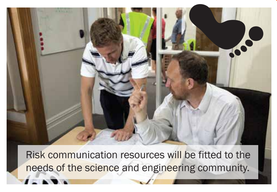
Interview Participants

- Several science organisations were targeted to engage with over the next 6 months. Participants were recommended using a snowball sampling approach.
- An interview protocol was created to share what we have learned and to uncover risk communication needs across different groups.
- Interview results should help identify specific communication needs and styles of engagement which is suited to practitioners.

Plan & Implement Engagement

- Engagement will involve the interview process and subsequent risk communication events (i.e., workshops, seminars, etc.)
- We will highlight: 1) Risk communication strategies which are suited to specific audience needs and contexts; 2) Managing risk communication challenges, and 3) Risk communication innovations.
- We hope to integrate these best practices into New Zealand's science and engineering sectors.
- Ultimately, the project will develop several types of resources:
  - *Summary report*
  - *1-pagers*
  - *Presentations*
  - *Workshops*
  - *Videos*

Co-produce Resources



Risk communication resources will be fitted to the needs of the science and engineering community.

Preliminary Results

What are some areas of risk communication that works well?

- social media presence
- connecting to the public through multiple platforms
- simple language
- trying new, and innovative ways to communicate
- allowing the public direct contact with experts
- "direct-line" with the public (bypassing media)

What are some areas where you feel that we can improve?

- frequency of communications with the public
- bluntness of information delivery
- difficult to find science information
- information not targeted to specific groups
- need more clear organisational guidelines
- scientists not trained in risk communication tasks with some better trained than others

Risk Communication 'hot topics'

Story-telling and narrative
Unique voices of scientists
Inclusivity and diversity
Audience-centred communication
Empathetic messaging
Citizen science

Practitioners emphasised the importance of emerging technologies in risk communication

Practitioner communication needs

- multi-organisational and hazard-specific guidelines
- guidance on how to do face-to-face community engagement
- (want) feedback/evaluation of current practice

Challenges to Engagement

- practitioners have differing definitions of what constitutes risk communication
- emphasis on operational and crisis communication
- logistics/scheduling of interviews and engagement
- unique needs/wants to accomodate

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