



Reviewer comment on gc-2021-3

Christopher Skinner (Referee)

Referee comment on "*Breaking the Silos: an online serious game for multi-risk disaster risk reduction (DRR) management*" by Marleen Carolijn de Ruiter et al., Geosci. Commun. Discuss., <https://doi.org/10.5194/gc-2021-3-RC2>, 2021

This paper details the development of a roleplay-style game designed to help different stakeholders understand the complexities of disaster risk management (DRM) when considering multiple hazards. Although similar games exist with a DRM theme, *Breaking the Silos* is novel in the way it forces participants to understand and deal with the multiple hazards, appreciating that actions to mitigate one may have negative consequences with another. The paper is well written, well researched, a pleasure to read and will be of interest to the readers of *Geoscience Communication*.

I do not consider that the manuscript requires any major edits to be suitable for publication. However, there are some changes I suggest the authors should consider to improve it further.

- The structure and focus of the manuscript could be altered to better sell its strengths. Nearly a third of the abstract covers the use of the game and participants' feedback yet the section covering this (Section 4) was disappointingly short. This is not a problem as the main strength of the paper is the design of the game and the comprehensive research that went into it. To reflect this, the manuscript could be restructured as a practise-based research* project where the game itself is the main result. In this form, Section 3 would come before the description of the final game design and include a little more discussion about how your design choices were informed by past research, and how they serve to meet the objectives. The abstract and conclusions should also be edited to make a bigger deal of how the game design was research-led.
- To increase the significance and citation rate of the final manuscript, greater analysis of the game in action could be included. In particular, the involvement of social scientists specialising in participatory methods and observations could provide fascinating insight into how participants play the game, the conversations they have, and how they make decisions in different circumstances.

Whether the authors choose to act on either of the above or not, there are a number of minor edits and inclusions that should be made in a revised manuscript.

- The moderator role seems absolutely vital to the running of the game and ought to be given its own dedicated heading somewhere. Under the heading the role of the moderator should be discussed, including how they are recruited and trained (there's some information on lines 278-280 but it is not clear). Are the moderators independent or one of the research team? What happens if the moderator isn't very good, can the game still succeed? In Lines 358-360, the authors mentions removing the moderator in future versions – will this be possible and what are the implications? As Lara Mani suggests, the role of moderator here would be traditionally called a Games Master in roleplay games – I agree this should be mentioned, but think moderator is more suitable for a wider audience.
- On Lines 210-211 the authors briefly mention that participants are encouraged to reflect on their experience. The authors should expand on this and consider their choices here as a vital part of their game design. I refer them to work by David Crookall (<https://journals.sagepub.com/doi/abs/10.1177/1046878110390784> from Page 907) discussing the importance of the debrief to achieving the learning outcomes of a game or simulation. This point is somewhat linked to the above as debrief occurs throughout the game too, facilitated by the moderator – again, highlighting the key importance of this role.

Finally, there are some minor things that could be included but not essential. –

- The authors discuss how the development and implementation of the game were affected by the Covid-19 pandemic however, a global pandemic has not been considered as one of the possible hazards. This seems a glaring gap and missed opportunity and it should at least be mentioned briefly why it was not included.
- It would be interesting to find out more about how the prior experience of the players influences the decisions made and/or the processes through which decisions are made. Also, in reference to Lines 153-155, how does having different stakeholders missing influence this – could scenarios be set up to represent different governance systems in DRM between nations?
- Line 159 – just a clarification here, can the three hazard types, levels, and timescales be the same? i.e., could three high intensity floods be randomly selected?
- Lines 165-166 – change “DRR measures they want to implement” to “they want to implement DRR measures” so this reads correctly.
- Lines 179-180 – During the participants' 10 minute breaks are they allowed to discuss the game and their strategy? Does this become an unofficial briefing period?
- Line 220 – I'm not sure “two different game modes” is correct. It would be better to say that the game can be adapted to suit different audiences or for bespoke scenarios.

Thank you to the authors for this interesting and important manuscript. I look forward to seeing the revised version.

Chris Skinner

*A note to the editors – I think the guidance for Research articles could be edited to explicitly state that practice-based research approaches are acceptable.