Response to Reviewer 1 RC1
hess-2016-13
Improving together: better science writing through peer learning

Reviewer quote: I do think this paper could be strengthened by the inclusion of metrics for the effects the writing groups had on the participants, so perhaps developing such an assessment could be a future research goal for the authors?

Reply: Thanks to the reviewer for a very constructive suggestion. Since we received both the reviews we have had an intensive discussion within the author group about such metrics.

The author group agrees that getting formal metrics in retrospect would not be desirable. The metrics from the UEA group are very clearly described as "informal" and we only use these as indications of the effects.

Metrics are something the project managers should absolutely have considered at the beginning of the project. However, ClimateSnack has always been a voluntary project where many of us have used our free time, with little or no funding, to develop groups, support authors, and write ourselves. We feel that formal metrics would have taken considerable time to develop and instigate. This would have required considerably more funding.

The reason we think that this would have been more complicated than maybe first imagined, is that the effects of such writing groups are so multi-faceted. As we have discussed in the paper, it's not just about writing quality; the effects are also concerned with general confidence, critical thinking, and network building. We must also consider the writing *process* in addition to the quality of the final product.

We also discussed how we could have measured improvement in writing quality. This would likely have been left up to the participant to judge himself. One of our authors pointed out a substantial challenge with this. He was a very confident writer before he joined ClimateSnack. However, through the writing process and group feedback, he started to understand that his writing was not as skillful as he first assumed. If he had filled out a self-assessment form before and after his participation, he may have actually perceived a decrease in writing quality, whereas objectively his writing had actually improved.

Moreover, ClimateSnack is an initiative where virtually all participants are early-career researchers. Most objective metrics would require members to have relatively long control periods both before and after joining ClimateSnack. The former requirement already excludes the large majority of members, who joined ClimateSnack during their Ph.D.

As part of the review process we carried out a survey to gather information such as acceptance rates of paper and abstracts, success in applying to travel awards etc. However, we quickly realised that most of our members joined ClimateSnack very early during the career, and that the changes in the metrics perhaps reflect more the natural development of their scientific abilities than the benefits of our writing groups.

Our most important point is that we feel our whole paper is already a metric. Indeed, it is not a quantitative metric (as alluded to by the reviewers), but it is a narrative metric. We feel that this is both more valuable and robust than an *ex post* survey, which would encounter all of the issues described above. The whole paper is built upon the narratives of 13 of the most active ClimateSnack members and others. Everyone in the author group has been a member of a ClimateSnack writing group. Some started groups that succeeded, whilst others started groups that dissolved. All the authors have built a network internationally (case in point, the present paper), and also extended their networks where they work.

Proposed action: We will add text explaining that we take a narrative approach in this paper and emphasizing how much the authors have contributed to this project. We will also add text to say that the lack of quantifiable metrics may be a limitation, but that this is something we could consider for the future. Similar projects should certainly consider metrics from the beginning, if funding allows it.

Reviewer quote: **In lieu of a formal assessment, are there other data that could be used to support the claim that these writing groups are beneficial? I'm thinking of things like acceptance rates of papers, grants awarded, or similar metrics for the participants during the time they were involved in these groups. I realize that the timeframe (since 2012) makes this difficult, but even a few qualitative examples could be useful.**

Reply: The reviewer is presenting some nice ideas for future assessments. As part of the present review process we attempted to carry out a survey to gather such information amount previous participants. However, we quickly realized that most of our members joined ClimateSnack very early during the career, and many had not submitted grant proposals or papers before joining. It was therefore difficult to judge objectively if any improvement had been made. Again we fall back on our argument that the narrative metrics (stories) are the most appropriate way to convey the results of ClimateSnack, without carrying out a professionally-designed survey.

Some qualitative examples could be useful as the reviewer says.

One example comes from the ClimateSnack founder. His writing went from being "heavy and passive" by one reviewer, to "Excellent" by another reviewer just two years later. He and another co-author also organized a successful writing workshop course in Uganda in 2015 where the participants worked together in small groups to improve their writing following a series of short lectures. Neither of these developments would have happened if it wasn't for the time invested in ClimateSnack.

Also, another participant had one of her snacks published online in one of the biggest newspapers in Norway. Indeed, someone else had to translate it into Norwegian, but the story and the flow were the same.

Proposed action: Since we are concentrating on narratives evidence, we can include some of these anecdotes, if the reviewer agrees.

Reviewer quote: I like the explicit detail provided about the writing process and the accompanying figure. I was wondering if only one member of the group is working on a piece at a time? Also, how long are these meetings? With 20 people, is each one giving a few minutes of feedback or is it more of a free-for-all discussion?

Reply: We can certainly include more specific information about the meetings in section 2. This is clearly useful information that readers will want to hear if they are considering forming a writing group. To answer your questions, all the participants could work on posts at any time. Once they were ready, then they would be read at the group meetings and feedback would be given. This would usually take 20-30 minutes per article. The chairperson would be in charge of guiding the discussion, trying to avoid a "free-for-all" discussion.

Proposed action: We will include information about meeting length and size in section 2 where the writing process is described. We will also describe in more detail the responsibility of the group leader to guide the discussion so that it does not become a chaotic free-for-all.

Reviewer quote: Do the groups use any online co-editing software (I'm thinking of something like Google docs) to share comments or are they all hand-written on printed copies?

Reply: Again, this is useful information that we should include this information in the manuscript. Initially, we encouraged the participants to provide hand written feedback. One of the main reasons for this is that it encourages people to attend the meeting s and physically hand over the annotated document and explain why they made the changes. Editing software means that people can contribute remotely and might not turn up. However, online editing would be an excellent resource if virtual writing groups could be developed in this project, which is something we have considered before but not got funding for.

Proposed action: We'll explain in greater detail how the feedback is given, probably in section 2.

Reviewer quote: On page 3 line 21, you seem to imply that improving basic writing skills will automatically translate into improved scientific writing skills. I think the former is necessary, but not sufficient, for the latter. Can you be a bit more explicit about some of the skills you do/do not think are covered by this process? I'm also thinking about how skills related to creating effective blogposts do/do not relate to other types of writing required by scientists (e.g. see next point).

Reply: We agree that the "former is necessary, but not sufficient, for the latter", however the form is *necessary,* and that's where ClimateSnack positions itself. To improve science writing and outreach, we must improve our basic writing skills.

This comment also inspired a healthy discussion amongst the co-authors. We feel that that many of the skills needed for quality blogging can be transferred to scientific writing. These are:

-basic writing skills
-critical thinking
-ability to summarize (conciseness)
-story-telling skills
-why it matters
-argument structuring

In the same note, we understand that the technical ability and understanding required for quality scientific writing cannot be gained from blogging experience.

Proposed action: We can certainly add a sentence where we clarify our position that blog-writing skills can improve scientific writing, but do not qualify an author to write quality scientific articles.

Reviewer quote: This is more about the concept than the paper, but have you thought about using these groups to provide peer-review for other types of writing ECS's are faced with? I'm thinking about things like grant proposals, scientific papers, abstracts for conferences, etc. This might entice ECS's who aren't committed to writing blogposts, but would engage in activities more focused on something they already have to do.

Reply: It's really nice to read these suggestions and that our paper has made the reviewer think laterally like this.

These types of initiatives are not part of the concept directly. We have thought about things like this before, but we wanted to keep ClimateSnack as focused as possible.

However, that is not to say that these types of discussions have not occurred outside the groups or even within some groups on occasion.

Several of the co-authors commented on this issue. Since the writing groups create friendship, the members of one group asked each other for opinions and comments on other types of writing (mostly abstracts for conferences and travel grant applications).

In another group, a Ph.D. student, who participated in several of the meetings, had serious difficulties with writing in English. This was a particularly pressing concern for him as the student was nearing the end of their Ph. D. and needed to write up some of the results in a paper. For one of the Snacks the student brought along the abstract and a short section of a paper and received feedback much like a normal "snack". The student did not upload this to the website because it was material that would late be published in a peer reviewed journal. The student found the process very helpful, and seemed to take on board most of the copious feedback.

The challenge with other forms of writing is that they are often much longer than shorter blog posts. Several meeting would probably be needed to give constructive feedback on a single paper for example. Also conference abstracts should not be published online until later. This defeats the objective of the website, that we feel is an integral component of the ClimateSnack process.

Proposed action: Since other forms of writing are not a direct part of ClimateSnack, we would like to refrain from referring to them earlier in the paper. However, we will add a sentence or two explaining that the friendships and community built up around the writing groups allows us to seek out advice about other forms of writing. The reviewer could let us know if she would like us to include more details about specific examples that we have mentioned above.

Reviewer quote: **Along the same lines, for groups not comfortable with how to give feedback, I wonder if a structured rubric would be a good complement to the process depicted in Figure 2? I've been using rubrics based on the goals of the writing product in my undergraduate scientific writing class and it seems to help the students get started on first assessing the content (function) and then figuring out how the structure (form) could best support the ideas.**

Reply: The reviewer touches on an important point here. Confidence in writing is often reflected in confidence to give feedback. Rubrics are absolutely a valuable tool that we should certainly promote more actively and we have tried to promote via expert posts on the website. However, we wanted to describe the process that we promoted from the beginning of the project. Therefore rubrics are not mentioned specifically in the article.

Proposed action: We appreciate the reviewer's suggestion. If the reviewer agrees, we could a sentence or two in the section 2 about rubrics to inform the readership. However, we will have to mention that we have yet to actively use these in our groups.

Reviewer quote: **Page 2, Line 11: I think a word is missing between "communicate" and "disciplinary"**

Proposed action: Thank you for noticing. We will fix this.

Reviewer quote: **There seems to be inconsistency in whether or not the first line of a new paragraph is indented (e.g. page 6 line 22).**

Proposed action: Thank you for noticing. We will fix this according to the guidelines for the EGU journals.