ESSD reviewer responses:

Reviewer 1:

This editorial provides a short collection of anecdotes that speak to the benefits of open discussion forums in providing training peer-review for early career scientists (ECS). These benefits are experienced by students providing peer review and also the authors who are receiving the peer-review.

I was particularly excited to read this manuscript. I am an editor at another Copernicus journal and have published on peer-review and held short courses similar to the one described here. I am over-averagely interested in this topic and very much welcome this contribution.

Very glad to hear about the reviewer's interest in this important topic!

Here are some ideas for improvements and edits:

(Abstract and paper organization) I would suggest renaming the 3 main parts of the story. Maybe split the descriptions between the author receiving and the student providing the peer review. Start with a description of the framework for the course itself.

1. A framework for a peer-review course
2. Experiences from an author
3. Experiences from a student

The reviewer has excellent ideas for restructuring the paper. We agreed that the flow could be improved. We've gone ahead and restructured our manuscript into 4 sections: Introduction, personal perspectives (which is now subdivided into first-person experiences from an instructor, a student and an author), recommendations for workshop and concluding remarks.

The edited structure flows much better and we now present recommendations of how to conduct a training exercise, instead of relating past experiences. We thank the reviewer for stimulating this restructuring.

(Line 8 and in general) I think the scope of this paper could be widened to have a (potentially) much bigger impact. Indeed ESSD is the journal in question, but actually the same ideas can be applied to any journal with an open discussion forum. I would recommend that the authors change the framing so that it includes this, but also clearly state that they use ESSD as an example. At the risk of putting words in the authors mouths, the Abstract could possibly start with something like "Journals with open discussion fora lend themselves for student peer-review exercises and training. ESSD is a good example of this, which is an open access journal for the publication of interdisciplinary datasets and articles".

Agreed! We've edited the introduction to broaden the scope beyond ESSD only, and we now relate more generally to open discussion forum style publications.

We've also edited the title to reflect this broader scope.

It now reads, "*Journals with open discussion forums are excellent educational resources for peer-review training exercises*"

(Line 20-29) I think it would be nice to tip one's hat to the many articles published on the need for training in peer-review and others who have published on how to peer review. There are many such articles out there, which would help to provide a stronger foundation for the authors claims in the first paragraph.

Agreed. We've added additional references:

(5)   Stiller-Reeve, M. How to Write a Thorough Peer Review. *Nature* **2018**. https://doi.org/10.1038/d41586-018-06991-0.
(6)   Berlinguette, C.; Gabor, N.; Surendranath, Y. "Refereeing Template": A Guide to Writing an Effective Peer Review. ChemRxiv June 8, 2021. https://doi.org/10.26434/chemrxiv.14723481.v1.
(7)   McPeek, M. A.; DeAngelis, D. L.; Shaw, R. G.; Moore, A. J.; Rausher, M. D.; Strong, D. R.; Ellison, A. M.; Barrett, L.; Rieseberg, L.; Breed, M. D.; Sullivan, J.; Osenberg, C. W.; Holyoak, M.; Elgar, M. A. The Golden Rule of Reviewing. *Am. Nat.* **2009**, *173* (5), E155–E158. https://doi.org/10.1086/598847.

We'd be happy to include other references that the reviewer might have also had in mind.

(Line 33) Also, the fact that each Copernicus journal has an open discussion forum, means that anyone with a registered account can provide a comment. Everyone's feedback is valid in an open peer-review process. In this sense, it is technically not necessary to contact the editor and author first. I would suggest that the authors change this in the text to say that anyone can actually provide a review, but we contacted the editor and author as a common courtesy. When I have held such courses before then we start the comments with a short description of how the review came about and the backgrounds and experience of the folks involved.

Agreed. The reviewer's point is exactly right. In principle, one does not have to wait until a review comes to them, but instead can use a discussion paper as the training material. This idea also helps address any timing issues (within a recurring course for example), since there are always papers in the discussion forum ready to be discussed/reviewed this this kind of peer-review exercise.

Now that we've restructured our discussion to present recommendations for a peer reviewing workshop, instead of relating our specific experiences, we've followed the reviewer's comment and stated explicitly that a instructor can submit a review at any time.

The text now reads, *"The goal of the primary exercise is to submit an open-review comment reflecting the concerted efforts of the students and compiled by the instructor (who has an account with the open discussion journal).*

The first few lines (63-69) of the section "Author receiving a peer-review report from a team of students" would be more appropriately positioned in the Introduction. I would like to hear a few more details in this section about what kind of feedback the author received and potentially how the feedback varied (or not) from a standard peer-reviewer.

We've now restructured our manuscript and expanded our introduction. We provide the feedback for the instructor, student and author in more details and follow these perspectives

with recommendations on a workshop. We think this restructuring also helps address this comment.

I have an issue with the use of "I" and "us" and "we" in the text, which I am sure you can find a solution for. It gets a little confusing when there are 3 authors and the first-person pronouns relate to different authors throughout the text. One suggestion could be to provide the authors name in brackets in each of the subheadings. For example, "Student providing a peer-review report (by Samuel Carlsen)". Or find another rhetorical move that tackles this issue. Either way, I feel this needs to be resolved.

We agree with the reviewer's criticism and have struggled with addressing the flow of the text. We think that now with the restructuring of the sections, we can provide a clearer flow and tone. We therefore use "we" throughout the text, and as the reviewer suggested, use "I" within specific sections with our names associated.

Finally, the authors do a good job at presenting the positive aspect of such training exercises. However, I think it could be a healthy to ponder potential pit-falls in training processes such as this. Are there any?

The reviewer makes a fair comment. We're not suggesting that all reviews be by students. A combination of expert review and student review could be ideal. There might also be a longer timeline to a student peer review. On a related note, we consider that the students are likely going to be the future users of ESSD datasets and now specifically emphasize this point.

The text now reads, "*We can also recommend an additional session within the workshop where students are asked to develop potential applications of the data relevant to their interests. This element goes beyond the fundamental components of dataset review and focuses on their students' creativity, as well as their technical abilities and understanding of statistical methods and other analytics. Consideration of potential applications, even as a proof-of-concept, can also encourage closer examination of the precision, accuracy, or quality control of the review dataset.*"

This exercise is overall a win-win situation for everyone involved. The text now reads, "*We see a win-win situation for the trainee and the author involved.*"

I very much welcome this contribution to the literature on peer-review training. It provides a citable resource for me to justify many of my own practices, which I appreciate. With some easy changes, I believe this editorial could have a wider impact than just to the readership of ESSD (which it seemingly targets at present).

This reviewer's enthusiasm and feedback is very much appreciated. With the critical feedback from this reviewer, our manuscript has significantly improved. Thank you!