

ESERA 2019 Pre-Conference Workshop

THE CHALLENGES INVOLVED IN REVIEWING PAPERS AND PROPOSALS FOR HIGH IMPACT JOURNALS AND CONFERENCES

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Requested maximum number of participants: 40

Short description of relevant areas of expertise for each workshop facilitator

María Pilar Jiménez-Aleixandre has extensive expertise in peer-review; she is currently co-editor of the Issues & Trends section of *Science Education*; she serves on the boards of *Science Education*, *Environmental Education Research*, *International Journal of Science Education* and *Science & Education*, among other SSCI indexed journals; she also serves as reviewer for JRST, IJSE, Educational Psychologist or Thinking Skills & Creativity; she served as strand coordinator in several ESERA conferences and as referee for ESERA doctoral school, and for NARST, AERA and other conferences; she has reviewed research proposals for the US NSF, and other national agencies, as from Spain, Israel, Colombia or Ecuador.

Knut Neumann has extensive expertise in peer-review; he is currently associate editor of the *Journal of Research in Science Teaching*; he served as an Associate Editor to the Journal of Science Teacher Education and was Editor in Chief for the German Journal for Science Education; he is a member of the editorial boards of *Journal of Research in Science Teaching*, *International Journal of Science Education*, *International Journal of Science and Mathematics Education*. He has reserved as a reviewer for a broad range of SSCI index journals such as *Learning and Instruction* or *Science Education*. He has served as a strand coordinator and reviewer for NARST and reviewer for ESERA; he has reviewed research proposals for the German Research Association and other national research agencies from, for example, Israel and Switzerland.

Sibel Erduran has extensive expertise in peer-review; she serves currently as editor of the *International Journal of Science Education* and as editor for the Science Studies & Science education section of *Science Education*; she serves on to the editorial boards of *Thinking Skills and Creativity*, *British Journal of Interdisciplinary Studies*, *Language Studies*, *Science and Engineering and Journal of Research in Science and Technology Education* among other journals.

Workshop abstract:

As the Science Education research community develops, the number of journals, journal submissions and conference proposals is increasing, bringing about a strong need for more referees. However, a problem noticed by strand coordinators (and some journal editors) is the lack of homogeneity or even the existence of great discrepancies among reviewers. The main aim of the workshop is to share with participants, in particular with early career researchers, criteria and tools for conducting good reviews and, additionally, for writing good papers and proposals. The methodology would involve participants in tasks of assessment about a range of dimensions that should be examined in manuscripts, using excerpts from initial versions of selected papers of the facilitators' published research to review that, in the debriefing, would be subsequently compared with the published version. The dimensions draw from review guidelines in the website of high impact science education journals such as: a) whether a manuscript contains new and significant information; b) the quality of the research questions; c) the quality of the literature review; d) the appropriateness and rigor of methodologies; e) the coherence between the findings and the interpretations;

f) adequate justification of conclusions on the results. It should be noted that a three-hour workshop is an introduction, as scholars learn to write good reviews through practice and enculturation in the community. Current challenges to the peer-review system will be discussed.

Keywords: peer-review, publication standards, publishing

GOALS OF THE WORKSHOP: SHARING CRITERIA FOR GOOD REVIEWS

Since ESERA was launched in 1995, the science education research community in Europe –and internationally– has experienced substantial developments. In the last two decades the number of science education journals, of submissions to journals –with averages of over 400 submissions every year to major journals–, and of conference proposals has increased exponentially, bringing about a need for referees. While more experienced reviewers are overworked, journals call for early career scholars to become referees. However, a problem frequently noticed by strand coordinators and journal editors is the lack of homogeneity among reviewers, or even sometimes the existence of great discrepancies. Sometimes reviews and suggested decisions about acceptance are not adequately justified. Problems with poor reviews include not being constructive or, failing to identify substantial flaws such as lack of focus in the research questions, insufficient literature review or biased data interpretation. These problems may be related to the fact that, according to a *Nature* survey, 40% of reviewers never received any peer-review training (Karbstein, 2018). As a result, the peer-review system is sometimes questioned (Shatz, 2004); nevertheless it is widely seen as the best process that we, as a community, have, in order to ensure good quality publication (Eddington, 2018; Paltridge, 2017). The main aim of the workshop is to share and discuss with participants, in particular, early career researchers, criteria and tools for conducting good reviews and, additionally, for writing high quality papers and proposals.

SCHEDULE OF THE WORKSHOP

The workshop will include a range of activities to engage the participants in interactive discussions. There will be particular foci on evaluation criteria, analytical frameworks and data interpretation along with standards of writing acceptable in academic conferences and publications. Considering the international membership of ESERA, special attention will be paid to any concerns or questions about publishing in English as a speaker of another native language. Furthermore, there will be discussion about publishing in a non-English journals as some examples.

Activity	Purpose	Time	Facilitator
Framing: Welcome; overview of the workshop	To introduce the purpose and the outline of the workshop.	9:00 – 9:15 15 minutes	M. Jimenez-Aleixandre, K. Neumann, & S. Erduran
Criteria for good reviews & problems experienced when writing reviews: Working in groups of 4, participants will develop four criteria for high quality reviews. Discussion.	To made participants aware of their ideas about peer-review, and to share the problems they experienced in conducting it. It will include a brief review of literature.	9:15 to 9:45 30 minutes	S. Erduran, M. Jimenez-Aleixandre
Focus 1, Research questions: Group work on initial RQs from facilitators papers (ex, Monteiro & Jiménez-Aleixandre, 2016)	To introduce participants to a critical review and identification of comments to support refinement of RQs. The groups' results are shared and a plenary discussion is held.	9:45 to 10:30 45 minutes	All, supporting the group work; debriefing M. Jimenez-Aleixandre
Focus 2, Methods and tools for analysis Group work on initial methods and analysis	To introduce participants to a critical review and identification of comments to support refinement of methods, in particular research design	10:30 – 11:15 45 minutes	All, supporting the group work; debriefing S. Erduran

	and analyses. The groups' results are shared and a plenary discussion is held.		
Break		11:15–11:30 15 minutes	
Focus 3, Data interpretation Group work on results and conclusions	To introduce participants to a critical review and identification of comments to support refinement of results and conclusions. The groups' results are shared and a plenary discussion is held.	11:30 – 12:15 45 minutes	All, supporting the group work; debriefing K. Neumann
Synopsis: Plenary discussion	To summarize key points emerging from the workshop and provide a discussion on future directions.	12:15 –12:30 30 minutes	S. Erduran, K. Neumann & Maria Pilar Jimenez-Aleixandre

ACTIVITIES OF ALL PARTICIPANTS AND EXPECTED ROLES

The participants will engage in focused tasks and group discussions. They will present summaries of issues, concerns and suggestions generated in group discussions to the whole group. The organisers will provide specific feedback to individual questions raised by the participants, and collectively contribute to whole group discussions as well as specific tasks.

LITERATURE RELEVANT TO THE WORKSHOP

- Atjonen, P. (2018). Ethics in peer review of academic journal articles as perceived by authors in the educational sciences. *Journal of Academic Ethics*, 16(4), 359–376.
- Calò, L. N. (2017). The editors' role on peer review: how to identify bad referees. *Blog-Scielo.org*, 29/06.
- Clark, A. M. & Bailey, J. S. (2017). The growth of the *International Journal of Qualitative Methods*: Why readers and writers need good peer review, reviewers and Editors. *International Journal of Qualitative Methods*, 16, 1–2.
- Edington, M. (2018). Losing our modesty: The content and communication of peer review. *Journal of Scholarly Publishing*, 49(3), 287–304.
- Karbstein, K. (2018). Responsible peer review (Editorial letter). *American Chemical Society /ACS Chemical Biology*, 13, 3217–3218.
- Paltridge, B. (2017). *The discourse of peer review: Reviewing submissions to academic journals*. London: Palgrave Macmillan.
- Shatz, D. (2004). *Peer review: a critical inquiry*. Lanham, Maryland: Rowman & Littlefield
- Zaharie, & Osoian (2016) Peer review motivation frames: A qualitative approach. *European Management Journal*, 34, 69–79.

It needs to be noted that we have been unable to locate literature specific to peer-review in science education.

MATERIALS NEEDED

Large chart/poster paper, markers

Video projector