

## ENGINEERING EDUCATION RESEARCH: WRITING FOR PUBLICATION

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## **ABSTRACT**

This interactive workshop, facilitated by a team of editors, associate editors and experienced reviewers from a number of leading journals in engineering education, allowed participants the opportunity to network with other researchers and to learn about the journal publication process and how best to navigate it as an author.

It provided an informal opportunity for both early-stage scholars, as well as those with more experience, to share their publication journeys and experiences, both positive and negative, directly with each other and journal editors.

## **1 INTRODUCTION**

The process involved in getting an article published in any academic journal can be difficult to navigate. Within Engineering Education Research (EER), the publication journey can be particularly complex and challenging, in part, as a result of its interdisciplinary nature, meaning that researchers draw upon theories and methods from multiple domains and thus face challenges associated with differences in disciplinary paradigms, terminology, publishing traditions, and norms. The diversity in the research approaches also means that there is a wide range of journals available to those looking to publish their work, each having its own distinct scope. Specific journals may, therefore, focus more on scholarship of teaching and learning (SoTL) as opposed to theory development. They may be aimed at a general education audience, rather than specially at engineering education practitioners and researchers, or their focus may be on quantitative over qualitative studies. Such variation can leave authors wondering exactly what editors and reviewers seek, how to focus their manuscripts, and how to expand conference papers to a level acceptable for journal publication.

Understanding the requirements and appropriateness of each journal can help save time for all involved in the process. It can also help make the experience constructive and meaningful in terms of researcher development and is likely to lead to more impactful publications of higher quality.

Although journals put significant effort into disseminating their scope, it can be challenging to interpret. To help researchers develop a better understanding of the process and landscape, this workshop provided an overview of the academic publishing process to make this process transparent and attainable. This took place through a facilitated discussion that stimulated reflection, allowing everyone the opportunity to share their experiences and help foster a supportive community of authors with a better understanding of the journals' processes.

## **2 WORKSHOP DESIGN**

Understanding the requirements and appropriateness of each journal can help save time for all involved in the process. It can also help make the experience constructive and meaningful in terms of researcher development and is likely to lead to more impactful publications of higher quality.

The workshop mainly attracted authors with little or no experience in publishing in EER Journals. The workshop attracted around 50 participants who worked in groups of 4 or 5, with 10 Editors/Associated Editors distributed across the groups facilitating conversations regarding participants' questions and concerns related to the publishing process.

The Engineering Education Research journals represented included:

- European Journal of Engineering Education (SEFI)
- Journal of Engineering Education (ASEE)
- IEEE Transactions on Engineering (IEEE)
- Australasian Journal of Engineering Education (AAEE)
- Studies in Engineering Education (SEE)

A key part of this process was to introduce participants to the people behind the journals' decision-making in an attempt to bring a human side to what can seem a remote and abstract process.

## 2.1 Workshop Outline

The workshop agenda was designed to promote engagement and interaction between the participants and the workshop leads.

- 10 Minutes - Welcome and Introductions – Getting to know each other (facilitators and participants).
- 10 Minutes - Think-Pair-Share/Quickfire Discussion – What is your experience of authoring EER journal papers? What would you like to know (or would have liked to know) as a new author? What is the most daunting aspect of authoring?
  - Collating “what you would like to know” and “what is most daunting” to seed discussion in the next activity.
- 20 Minutes - Group Discussion with each group facilitated by an editor (one of the workshop leads) - Strategies for authoring (focused on the outcomes of the initial group discussion regarding daunting aspects of authoring).
  - Break-out groups collaborate on an online shared document to collate and distil workshop discussions and insights.
- 10 Minutes - Synthesis – Discussion of results from each group.
- 10 Minutes – Wrap-Up and Top Tips from the Editorial Teams.

Through these dialogues, participants co-created an enhanced understanding of strategies for success in academic publishing that formed the basis of the final workshop output.

## 2.2 Workshop Outputs

The final plenary session of the workshop collected a number of key questions and concerns of participants and drew enlightening responses from the editors present. These included:

- How to deal with conflicting feedback between reviewers?: Ideally, if this happens the editor or associate editor should provide guidance, however, if there are concerns the team suggested reaching out the editor for support. Authors were advised to address this specifically in their response to the reviewers and to highlight how they navigated this conflict.
- Can you push back on reviewers' comments?: The general response was yes, but with well-justified answers. The editorial teams reminded authors that the reviewers are advisors in the process. Ultimately the editor is the one with who makes the final decision.
- Concerns over appropriate methodologies: It is important to demonstrate an understanding of the context of the methodologies proposed in your work and, in particular, how they are usually applied in EER. It was suggested to “find your tribe”, get in touch with seniors in the field, ask them for feedback on drafts, abstracts, etc. Make sure you tell the story of your work and be clear on the reasoning of the choices. It was noted that mixed and qualitative

methods are increasingly accepted in EER but you must ensure that you ground your research in theory.

- It was asked, 'How can we show an intervention is actually working if we can't do a full double-blind trial with the class?' There is no one answer, but evidence should go beyond student self-report data (student surveys). Care should also be taken in using assessment results—while we aim for comparability of assessment between years, this is not always done with the rigour we would expect of a research tool.
- Choosing a journal: The emergence of 'predatory' journals was discussed. It was highlighted that many of the key journals (and those represented at this session) were linked to engineering education societies, such as SEFI, and that this promotes a higher level of confidence in the quality of the publication. For more information on journals within the Engineering Education Research space, authors were encouraged to see the Journals page of the Research in Engineering Education Network (<https://reen.co/eer-journals/>), which gives a non-exhaustive list of key journals.

Prospective authors were encouraged to engage with reviewing in journals to get a better understanding of the process. For example, many journals will give potential reviewers the chance to sign up for reviewer programme (e.g. JEE - [tinyurl.com/ReviewForJEE](https://tinyurl.com/ReviewForJEE)).

#### **SUMMARY AND ACKNOWLEDGEMENTS**

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