TRAINING UNDERGRADUATE RESEARCHERS AS PEER REVIEWERS

Merinda Kaye Hensley, University of Illinois Urbana-Champaign

If scholarship can be likened to an ongoing conversation, and we intend to democratize access to the undergraduate experience, we absolutely need to diversify the voices that participate in those conversations by welcoming undergraduate researchers into the peer review process.

INTRODUCTION

The University of Illinois Urbana-Champaign Library designed a curriculum to teach students the structure and expectations for what it means to participate in the full cycle of scholarship. We help students to see themselves as an active contributor to peer review by better understanding their role and responsibilities. In turn, this also refines their critical thinking and information literacy skills.

The University Library supports the publication of undergraduate student work through several disciplinary and one interdisciplinary student-run undergraduate research journals. There are currently five active journals with two ready to begin in Fall 2023:

- *Brain Matters* – Undergraduate Neuroscience Society, Student Run Organization
- *Illini Journal of International Security* – Program of Arms Control & Domestic and International Security
- *Undergraduate History Journal at Illinois* – History Department
- *Journal of Undergraduate Social Work Research* – Social Work Department
- *Re:Search, The Undergraduate Literary Criticism Journal at the University of Illinois at Urbana-Champaign* – English Department
- Forthcoming: *Women & the Law* – Women and the Law, Student Run Organization
- Forthcoming: *Illinois Student Undergraduate Research Journal* – Office of Undergraduate Research

ACRL FRAMEWORK FOR INFORMATION LITERACY FOR HIGHER EDUCATION

"Students have a greater role and responsibility in creating new knowledge, in understanding the contours and the changing dynamics of the world of information, and in using information, data, and scholarship ethically." (ACRL, 2016)

Frames/Threshold concepts (Meyer and Land):
- *Scholarship as Conversation*: While as expert disciplinarians/librarians, we know scholarship really isn't a conversation – there is competition, we try to one-up each other, we intentionally dismiss specific voices, etc. However, for our purposes we can take advantage of this metaphor to explain how the research process is a "discursive practice in which ideas are formulated, debated, and weighed against one another over extended periods of time." We also hope this process negotiates meaning as a community.
- *Information Creation as a Process*: We focus on indicators of quality and the evolution of creation processes including the different stages of publication e.g., pre-/post- prints, co-review/open review. Ultimately, we want students to be able to articulate the capabilities and constraints of information developed through various creation processes, and to articulate the traditional and emerging processes of information creation and dissemination in a particular discipline.
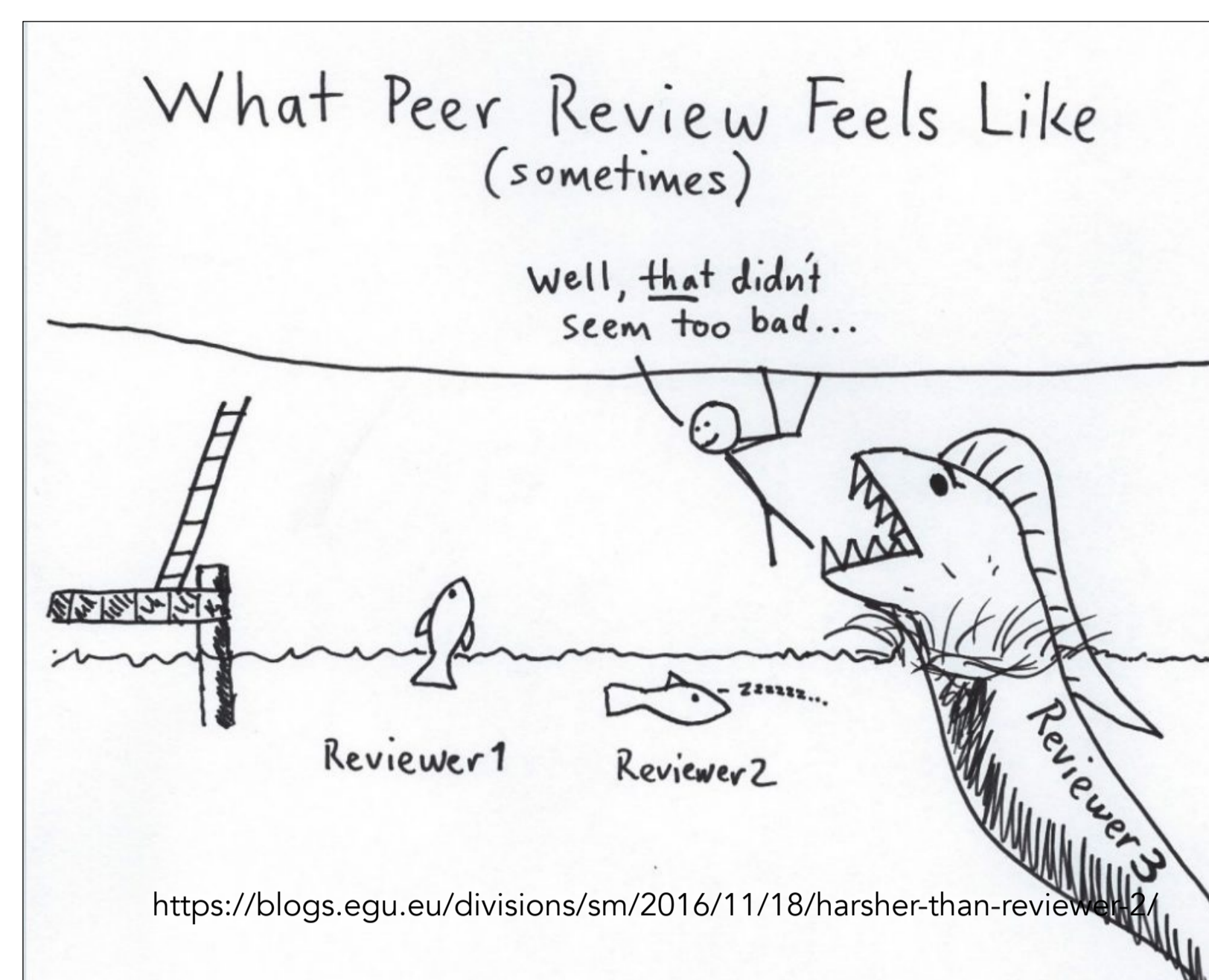
  - ✓ Engaging the mindset of a peer reviewer
  - ✓ Positioning their understandings of theoretical framing
  - ✓ What it means in practice to engage with the literature
  - ✓ Identifying strengths and weaknesses in data and analysis
  - ✓ Developing (in)appropriate techniques for commenting on clarity of writing
  - ✓ Strategies for providing constructive feedback including the art of asking a question
  - ✓ Soft skills e.g., what does an effective relationship with an editor looks like and where to ask for help

PROVIDING CONSTRUCTIVE FEEDBACK

Goal: Taking a "a pedagogy of kindness" approach with the feedback sandwich (i.e., positive reinforcement, questions/comments, more positive feedback) (Denial, 2019)
- Aid students in developing (in)appropriate techniques for commenting on clarity of writing. That is to say, focus on the writing students need to do as a peer reviewer by examining the relevance to the specific journal and its' charter, how to identify objectivity of writing style and clarity of the exposition, what to do if plagiarism is suspected (an interesting conversation for students to look at this from a different angle!), and how to evaluate the validity of reasoning and the originality/importance of a work within the context of a discipline when students may feel imposter syndrome.
- Active learning: Experiential activity asking students to review piece of writing that needs a lot of help, not just in the writing but also within the theoretical framing and data gathering. Work in groups to identify areas that could use improvement using a manuscript review form.
- Discussion: The art of asking questions = Q's for the author but also for themselves (as a reviewer) as they move thru the review process.
- Guest speakers: Writers Workshop

ULTIMATE GOAL: Building a community of practice: Encourage students to grow in their confidence to be strong peer reviewers by developing their own skills but also mentoring and sharing their experience with others (Wenger-Trayner, 2015).

What Peer Review Feels Like (sometimes)

https://blogs.egu.eu/divisions/sm/2016/11/18/harsher-than-review

High school students in the U.S. are being encouraged to find research opportunities with publication as one of their goals to add to their college applications. Of course, there are steep costs to participating in these programs – so necessarily blocking access for most of the high school population as well as international students.

A student from the article, Sophia, states: "If you don't have one, you're going to have to make it up in some other aspect of your application." and "It's just important that there's a link out there."

Golden, Daniel and Kunal Purohi, "The Newest College Admissions Ploy: Paying to Make Your Teen a 'Peer-Reviewed' Author." ProPublica, May 18, 2023. https://www.propublica.org/article/college-high-school-research-peer-review-publications

ENGAGING THE MINDSET OF A PEER REVIEWER

Goals: What does it mean to think like a peer reviewer? Take students outside general expectations of undergraduates as peer reviewers and help them connect their work to that of professional publications.
- Explaining peer reviewer's role, focusing on their responsibility as just one piece of a much larger puzzle. Understanding the context and methodologies of a discipline and recognizing research questions rarely have a single answer.
- Active learning: Model reviewing behavior by examining examples and using a peer review form and checklist.
- Discussion: In what ways does the publication process privilege some voices over others?
- Guest speakers: More seasoned undergraduate students who have been reviewing for at least one year, who can speak to their experience while pointing out some of the struggles they have faced and how they have overcome them.

Adding disciplinary context to the process
1. The intricacies of citation chasing: How chasing citations in a manuscript can help students to better understand the framing of a manuscript and helps them see why only reading the manuscript itself is not enough as a peer reviewer.
2. Impact of online identity: Looking up authors on Google Scholar and consideration of metrics. Who is the author? This is important for students to gain perspective within the impact of disciplinary publications and contextualizes the differences between disciplines e.g., STEM and the humanities.

UNDERSTANDING THEORETICAL FRAMING

Goals: It might be too much to expect that all students in an undergraduate research experience have taken a statistics or research methodologies course, but we want to demonstrate the finer picture of disciplinary research.
- Active learning: Students bring, and having read, a peer reviewed article from their discipline. Show students where to go to learn more about a specific methodology since realistically, they may not be familiar with what they have been assigned as a peer reviewer.
- Discussion: While students may not have time to read an entire book summarizing a specific research methodology for each article they review, we discuss why it is important as a reviewer to understand the author's chosen methodology and how to evaluate it as a peer reviewer.

Identifying strengths and weaknesses in data and analysis
- It is reasonable to expect that most students will have an amateur understanding of data, even if they have worked in a lab or helped to organize survey data as an undergraduate researcher.
- Oftentimes they haven't been pulled into a larger discussion for how to contextualize data within a larger research project. We hear this from students all the time, especially those working in labs where they are collecting data and may only have been told how to do that, not what it means for the entirety of a project (Riehle & Hensley, 2017).
- Subject liaisons can talk about data within the context of a discipline and can pull examples to show students the difference between a well-regarded research study and one that is less than acceptable e.g., a predatory journal or *Retraction Watch*.
- Guest speaker: Taught by a disciplinary librarian

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This program is a collaboration of efforts by the student teams representing several undergraduate-level disciplinary journals published by the Library in collaboration with the Office of Undergraduate Research and Writers Workshop.