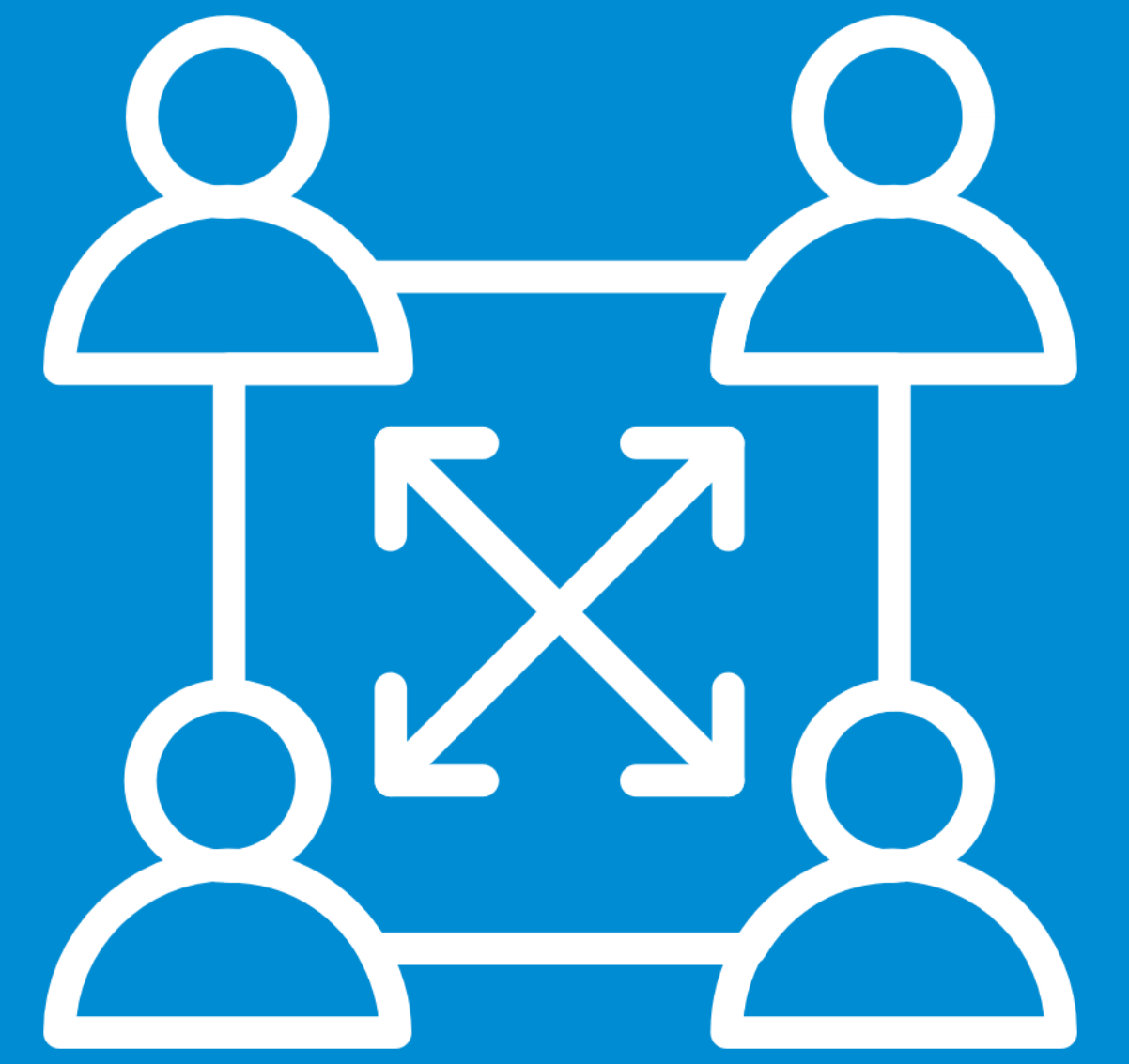


What do we know about how graduate students learn systematic review methods?

To improve students' learning experiences employ peer and expert feedback, use examples and methods resources, and provide opportunities to apply skills.



The Problem

Conduct of rigorous systematic reviews (SRs) requires a robust understanding of review methods, knowledge of the techniques, tools, and technologies needed to apply those methods, and the ability to navigate methodological challenges as they arise for specific review topics. Acquiring the requisite knowledge and skills can take place through various learning scenarios including formal training, on the job mentorship, and self-directed approaches. However, we don't know what aspects of learners' experiences in acquiring SR skills help or hinder achieving SR methods competence. **Having a better understanding of how learners gain SR methods confidence and competence will help SR trainers and employers to design and implement programs and other learning supports for students and early career researchers working on SRs for the first time.**

Methods

Qualitative case study informed by van Manen's phenomenological methods (1).

Data Collection Winter 2019:

- 9 semi-structured interviews (7 students; Instructor + TA);
- Observations in 5 classes;
- Review of online discussion posts and course material (syllabus, assignment instructions).

Data Analysis:

- Iterative thematic analysis (2) of interview transcriptions, starting from deductive and moving towards inductive.
- Observation data and review of online discussion forums added richness to the analysis process and findings.

"... I really like how everything we do in the course, whether it is [...] the classes, the discussions, the activities, like everything we do, ... is kind of a stepping stone to the larger project." (S2)

Key Results

Learners' experiences in the course can be characterized as *Legitimate Peripheral Participation* within a *Community of Practice* (3).

Themes:

- **Modelling of identity, values, and practices** by instructors helped learners gain **comfort with uncertainty**;
- **Tensions** in the design of the course, motivations to learn, methodological diversity, and other concepts **added complexity** to the learning experience and **creates challenges** for the design of effective adult learning approaches;
- Learners identified numerous aspects of the course structure and organization that contributed to their learning: **peer-engagement**, plentiful **constructive feedback**, **online + in-person interactivity**, and **scaffolding of course work** to build learning and skills.



Research questions

What are the experiences of graduate students in a term-long course as they learn the steps and processes to conduct methodologically-sound systematic reviews? Sub-questions: 1) How does situated learning theory, within the context of a community of practice, impact the learning experiences regarding SR methods; and 2) What educational tools, teaching approaches, or learning opportunities help students find meaning in acquiring and applying the skills to conduct a SR?

Sample interview questions

Main questions:

- For students: What have you experienced in terms of learning about systematic review methods
- For instructor/TA: What have you experienced in terms of teaching systematic review methods
- What contexts or situations have typically influenced or affected your experiences of learning [or teaching] about systematic review methods?

Selected probing questions

- How have you found meaning in the content taught in this course? What resonates for you in the content or the ways that you have learned in the course so far?
- What approaches or tools have helped you understand the concepts, skills, and material in the course?

References:

1. van Manen M. *Researching lived experience : Human science for an action sensitive pedagogy*. 2nd ed. London, Ont.: Althouse Press; 1997.
2. Braun V, Clarke V. Using thematic analysis in psychology. *Qualitative Research in Psychology*. 2006 Jan 1;3(2):77-101.
3. Lave J, Wenger E. *Situated learning: Legitimate peripheral participation*. New York: Cambridge University Press; 1991.

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"[The instructor] is kind of like the embodiment of a systematic review in her teaching, which is great. [...] She's very organized [...] the way that she does the class is very structured. And it's very systematic." (S7)

"... the fact that this a class that we're being graded on always – to me because I'm very focussed on my grades – always inhibits my true learning, because at the end of the day I'm like: 'what do I need to know, what do I need to say to the best marks'... which distracts from the true learning process, right?" (S3)

"...actually having written that myself, I think, is definitely... and getting SO much good feedback; it's incredible the amount of feedback that we receive on our work. [...] not only having completed it but even with what I've completed, I've received feedback now on my final protocol and so to move forward and be knowing what I did, and then also how I can make that better, has led me to a place where I would feel comfortable and confident doing it." (S5)

Overcoming uncertainty: Exploring learner experiences in a graduate systematic review methods course



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