

Learning About Our Disciplinary Reading Through Interdisciplinary Conversations

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ABSTRACT

This reflective essay explores some of what we have learned by participating in an interdisciplinary scholarship of teaching and learning (SoTL) project about disciplinary reading. In dialogic form, we reflect on why we chose to get involved in this project and how this project has changed our understanding of reading in and across the disciplines. We hope this form will reflect our excitement in these interdisciplinary conversations and will encourage readers to seek opportunities for their own interdisciplinary dialogues about reading. In our conclusion, we offer a few framing suggestions for those who wish to set up more conversations about reading or who are interested in the interdisciplinary power of SoTL.

Keywords: interdisciplinary, reflection, dialogue, reading, Scholarship of Teaching and Learning (SoTL)

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This reflective essay has its roots in conversation: the iterative conversations among members of an interdisciplinary research project into disciplinary literacy and the virtual discussion room we hosted at the Mokakiiks 2021 Forum for Scholarship of Teaching and Learning (SoTL). The conference theme was “catalyzing conversations,” and that is what we have tried to do then and now. In the online discussion room, we provided participants with the opportunity to discuss their disciplinary literacy practices in interdisciplinary groups because we have found this process so valuable for our own understanding. In this essay, we attempt to echo that process by using dialogic forms. Before we turn to this polyvocal dialogue about reading, however, we will provide a brief introduction to our interdisciplinary project.

DISCIPLINARY LITERACY AND OUR INTERDISCIPLINARY PROJECT

Reading is a foundational skill for academic and professional success emphasized in K-12 curricula. However, students often struggle with the reading they are asked to do in post-secondary contexts, not only because the texts are more difficult, but because the expected activities and epistemological assumptions underlying those activities differ from earlier reading experiences. Shanahan and Shanahan (2008) link the reading patterns demonstrated by disciplinary experts to “the intellectual values of a discipline and the methods by which scholarship is created in each of the fields” (p. 50). Moje et al. (2011) observe that even what counts as text differs between disciplines. And, as Middendorf & Shopkow (2018) note, “Each of the disciplines has its own ways of reading that instructors practice without thinking about them. Students don’t know about these methods because they are never told about them; consequently, they make mistakes” (p. 15). Faculty members as disciplinary experts may struggle to know what novices within the discipline need when learning to read in this context. They may have expert blind spots, where

educators with advanced subject-matter knowledge of a scholarly discipline tend to use the powerful organizing principles, formalisms, and methods of analysis that serve as the foundation of that discipline as guiding principles for their students’ conceptual development and instruction, rather than being guided by knowledge of the learning needs and developmental profiles of novices. (Nathan & Petrosino, 2003, p. 906)

Interdisciplinary conversations can illuminate some of these blind spots as faculty have to “decode” their disciplinary practices for others.

The official Decoding the Disciplines interview protocol (Pace, 2017; Middendorf & Shopkow, 2018; Miller-Young & Boman, 2017) was developed as a way for instructors to investigate specific bottlenecks in their students’ understanding of disciplinary concepts in order to identify the mental tasks needed for success, develop ways to explain and model those tasks, and provide opportunities for students to practice and receive feedback. Our interdisciplinary conversations have been far less structured, involving both synchronous and

asynchronous communication, and ebbing and flowing over the years. Nevertheless, the fundamental insight that “it is easier to see the shapes of disciplines in comparison to each other” (Middendorf & Shopkow, 2018, p. 7) inspired our conversations with each other and each other’s students.

We first came together in 2019 as a group of six faculty members from the sciences, social sciences, and humanities. We were interested in creating an interdisciplinary SoTL project to consider how disciplinary experts and novices read disciplinary texts. We began by exploring how we read disciplinary texts using a modified Decoding the Discipline approach (Middendorf & Shopkow, 2018); we then interviewed each other’s students, using Hilden and Pressley’s (2011) verbal protocol of reading (MRU HREB #101968). Dr. April McGrath (Psychology) has since stepped away from this project, but we value her contribution and conversation. We analyzed 28 interviews using empirical thematic analysis. Insights from those interviews will appear elsewhere. The main focus of this essay is our conversations as we reflect on why we chose to get involved in this project and how this project has changed our understanding of reading in and across the disciplines. Some of these conversations were recorded and transcribed; others involved our written reflections shared with and commented upon by others. Often the comment chain spun off into side conversations. These multi-modal conversations have been so rich that we provide exemplar excerpts of our dialogue here. We hope this hybrid form will reflect our excitement in these interdisciplinary conversations and will encourage readers to seek opportunities for their own interdisciplinary dialogues about reading. In our conclusion, we offer a few framing suggestions for those who wish to set up more conversations about reading, whether one-time events like the virtual discussion room at the Mokakiiks 2021 Forum for Scholarship of Teaching and Learning or more long-term communities of practice (Wenger, 2011). We also reflect on the importance of interdisciplinary conversations for SoTL.

WHY WE CAME TOGETHER (AN INTRODUCTION OF SORTS)

Karen (English): My early SoTL work focused on how undergraduate students read in General Education courses, but over time I became more interested in why they read. I began to read more about disciplinary literacy and recognized the motivating power of disciplinary identification. I also began to wonder if the generic how-to-read advice was even relevant to some disciplines. So I invited people from different disciplines I thought might be interested in reading to join this group. I hoped that, in our conversations with each other, 1) people would learn more about their own reading practices, especially as they had to explain their practices to people from other disciplines; 2) I would learn more about how different disciplinary experts read with the hope of taking some of that material back to my General Education classes; and 3) people would become interested enough in reading that they would take what they learned not only to their own classes, but to their departments.

Jon (Biology): I attended one of Karen’s presentations about reading at a professional development retreat (I think it was in 2018). In the Q&A after the presentation, it was apparent that my experience of reading in my discipline (science/evolutionary biology) was different from what Karen, her co-presenters, and others in the room were describing. I became interested in how we learn to read in our disciplines and how we teach our students to be experts at reading in our disciplines.

Jodi (Education): I was interested in this project because I find so much pleasure in reading and would love to understand how to help students become similarly captivated by reading, both aesthetic and efferent. There are so many creative and intriguing children’s books; I want Education students to fall in love with those books so they can “sell” them to the students they teach. I also believe that professional reading is integral to teachers’ professional development, and I want our students to bring curiosity and a growth mindset to their academic reading.

Scott (History): My initial interest in participating in this project stemmed from the opportunity it provided to see, from the undergraduate history student’s perspective, what reading for history looks like. My hope was that an intentional, reflective encounter with contemporary students’ perspectives on the purposes and value of academic reading, particularly students in other disciplines, could help me to better locate the reading I know I must assign within the constellation of 21st century students’ interests and priorities. That interest was further piqued by learning, in the initial stages of the project, of the vastly different ways that “reading” is understood and undertaken by my colleagues in other disciplines— which in turn encouraged me to reflect on the utility of those discipline-based differences in academic reading, and the implications of this for working in multi- and transdisciplinary fields such as Holocaust and genocide studies.

Brett (Chemistry): First, I’ve been interested in student reading for several years. After seeing a correlation between the ubiquity of smartphones and reduced leisure reading, I’ve been studying strategies for supporting student engagement with chemistry texts for disciplinary language development. The second motivation for participating in the project was the opportunity to work with Karen. Her work on critical reading in higher education has been influential on my thinking and my practice. In my “behind the scenes” work with the International Network for Chemistry Language Development, we’ve looked at barriers to faculty participation in collaborative research and teaching, and trust is often listed among the most important considerations. Fortunately, I’ve had the pleasure of working with Karen—and benefiting from her mentorship—so I trusted that.

HOW THIS PROJECT HAS CHANGED OUR UNDERSTANDING OF READING

This project has changed our understanding of our own disciplinary reading practices and the ways in which our undergraduate students read. As we reflect on our many synchronous conversations (both in person and online) and our asynchronous exchanges using the comment feature on Google Docs, we keep circling back to several themes: the value of seeing the disciplines in contrast to each other; connections across the disciplines; and the variability of appropriate approaches to reading depending upon purpose. In what follows, we offer excerpts of our conversations involving each of these themes.

SEEING THE DISCIPLINES IN CONTRAST

One of the most valuable aspects of this project has been the opportunity to explain our reading practices to peers with different disciplinary assumptions and to learn from their explanations. Every time we came together to discuss reading, we learned something new, something that surprised us. Our multi-disciplinary conversations defamiliarized our disciplinary practices, allowing us to recognize some of our blind spots.

Brett: Previously I hadn't thought much about how my conceptualization of "text" might differ from that of other academics. Meeting with the team, and listening to how the non-scientists approach the text, helped me reflect on my practice. In some ways, it yielded benefits for me similar to a Decoding the Disciplines interview.

Karen: I think what surprised me in the initial reflective writing we did was the nuance in disciplines that I had just sort of clumped together in my mind. Experts from all these disciplines were describing reading scholarly articles, but they were so different in what we focused on and when—even when coming from disciplines that to my (humanities-focused) mind seemed similar like chemistry and biology, or even within disciplines. Who knew that organic chemists had different reading patterns from physical chemists?

Jon: My experience of reading for work involves a particular set of skills and experiences regarding deciphering and interpreting scientific literature, which includes "reading" figures and tables. My reading is non-linear and often involves targeting particular sections of a paper (e.g. the methods or results) to find relevant information. Rarely did I sit with a piece of disciplinary writing, that is, a scientific paper, and read it deeply—which is what you seemed to be describing as your version of scholarly reading.

Scott: I admit to having a naively holistic conception of reading, at least in regards to academic articles. Obviously, I understand the utility of skimming, which begins with reading the abstract, but I was a bit stunned by the practice of starting with a search for terms and then consulting tables and figures (i.e., the data). It gave

new meaning to the notion of “gutting” an article. I was genuinely surprised when I learned this, as I assumed that the “data” contained in figures and tables always required sufficient interpretation in the more textual parts of scientific articles that it was necessary to read all or at least most of them.

Karen: Yes, before this project, I always assumed that what was in a chart would be explained in the text.

Jon: It is typically good practice to describe and interpret the result in the text, but we are trained to know that every degree of removal from the raw data invites further opportunity for misinterpretation or bias (or deception). So, we look at the tables and figures first to try to come to an unbiased interpretation of the data, and to evaluate whether the interpretation in the abstract, for example, is supported by what the author actually found.

Brett: I remember hearing someone in a SoTL reading group say that they don’t look at tables and graphs when reading papers. Several other participants agreed. It shocked me and left a lasting impression. Then, when I read *Teach Students How to Learn* by Saundra McGuire (2015), I observed how the tables were being used in a different—arguably pointless—manner compared to text in my discipline. The tables were simply a repetition and summary of the text, rather than being used to reduce the amount of overall text.

Jodi: I think the idea of skimming the abstract, conclusion, and then findings was interesting to me. I do that occasionally but often read in a more linear way. This makes sense to me when I think about reading in the sciences, but it’s not something I would say I typically do in reading in my discipline. Education tends to present arguments and may include data like the scientific tables you describe if it is quantitative research—or qualitative research as well, come to think of it. But qualitative data tends to be quotes and examples to illustrate the argument. I think I typically expect students to read from start to finish because I want them to understand the examples that help to illustrate the arguments the author is making.

Jon: I think it’s interesting that in your discipline, Jodi, your students are clearly doing two kinds of reading for two different purposes. They are reading children’s books, and they are reading scholarly articles. I don’t think there’s a distinction like this among the different things that my students read. They read textbooks and research articles. And I don’t really teach anything about how to use a textbook. In your discipline, Jodi (and maybe Scott and Karen too), the primary sources are also things to read (e.g. the children’s books). So students quite clearly experience different kinds of reading within a single course, let alone within the discipline.

Scott: That’s absolutely the case in history, where we spend significant time helping students to recognize the fundamental differences between primary and secondary sources, and then how to read them differently. Most students haven’t ever read primary sources before coming to university, and are understandably excited to have the chance to—but haven’t any of the skills required to read them

fruitfully or productively. They're familiar with secondary sources like textbooks, and so reading academic articles comes relatively easily, even though they typically read all sources, primary and secondary, either uncritically or with the aim of criticizing.

CONNECTIONS ACROSS THE DISCIPLINES

While many of our insights involved seeing our disciplines more clearly through contrast, we also made connections across the disciplines with very different content and ways of reading. These connections open new possibilities for our teaching practices.

Scott: Our discussion of how tables and graphs are read, or not, by students in science classes resonates strongly with my own struggles to teach history students that all of the types of non-written primary source evidence available to them can and should to be understood as readable texts—even though I generally believe that only a small number of students are ever able to “read” them as such.

Jon: Cool! I'm surprised that this hasn't sunk in for me until now—that nonscience disciplines also do things that they call “reading” that don't involve words. But it makes sense to me that all the things we've been talking about in this project (related to reading like an expert) can apply to looking at a graph, looking at archival photos, looking at a representation of an atom, or *reading* actual words.

Jodi: I told my students about our research this week. I'm asking them to review some research summaries and make connections between what the research says and how it aligns with or informs their tutoring experiences in schools. I asked how many were science minors and how they read scientific articles in those courses. I encouraged them to read these research summaries similarly—mining the sources for ideas that inform their examples and experiences.

Brett: I'm nowhere near finished processing all the ways this project has impacted my thinking. I see connections to my work in interdisciplinary teaching, Systems Thinking, chemistry language development, chemistry communication modalities and communication training, professional identity, and more. I'm confident that I would benefit from engaging with this group for the rest of my career, hearing perspectives and approaches of other disciplines to the issues in reading and information organization/communication that I'm learning about.

VARIATIONS IN PURPOSE

Our conversations reinforce the idea that successful reading involves considering the purpose of our reading. Specific behaviours can be appropriate in one situation and maladaptive in another.

Jodi: Our initial reflective writing helped me to detect patterns in my own reading and the reading of my colleagues. When reading for research, I tend to skim and search for points related to my thesis in order to incorporate those points into a literature review. The scientists in our group seem to similarly skim the abstract,

summary tables, and conclusions to see how the research relates to their current topic. By contrast, when reading to prepare for teaching, I read the text in its entirety, annotate key ideas, and list possible illustrative examples to elucidate a topic. This skimming experience made me think of how students also likely skim our assigned readings, looking for the kernels that will help them complete a preclass task or to incorporate in assignments.

Scott: I've too long been convinced that this is how most history students read—and it's a practice that is now also reinforced by students' ability to do very targeted database searches that yield snippets of what they believe is the vital text needed for inclusion in their own writing.

Jodi: Playing the devil's advocate—does this mean they are able to summarize and pull out the most important ideas? Can cherry picking be an attempt to find the essence of the paper?

Karen: I think cherry picking is an attempt to find the essence, but without working through the whole paper, I think a number of students struggle to identify what that main point is. I'm reminded of Howard et al. (2010) "Writing from Sources, Writing from Sentences;" their analysis of student writing suggests that many students seem to pick a specific sentence or two from a source rather than reading and summarizing the entire source.

Jon: It strikes me that "cherry picking" (a negative practice) is distinct from "distilling the main point(s)" (a positive practice). I think an expert might be able to accurately distill the main point(s) of a text without a thorough reading of the text, perhaps even by skimming.

Jodi: Good distinction. This is a fascinating idea to me, especially since the disciplines differ so much regarding how they want to direct students to read! **Scott:** I think you've all made useful distinctions between the positive and negative ways that skimming and targeted search tools can be used. We ought to be teaching students how to skim effectively and productively, since they'll often have no other choice but to do so in order to get through a large volume of often disparate research material. Cherry picking, on the other hand, needs to be identified as poor practice (since lots of students regard it as a perfectly valid mode of "reading") and actively countered. It was a revelatory moment for me when Jon said "one of the first things I do is immediately do a word search for the central item that's identified in the abstract," a practice that's so easily accomplished technologically. He's able to then do a kind of skim, if you will, that enables him to pull all those specific points out. That's a totally different kind of practice from what goes on in humanities.

Karen: What strikes me as one of the key differences would be how we're expecting knowledge to be created in each discipline and how our genres support that creation of knowledge. So the search term pulls up particular things for the biologist when they input it because they're primarily interested in data. But in other disciplines with more discursive views of how knowledge is created through

arguments created in words, as opposed to showing in data, the search term might be connected to some random secondary thoughts in the target article.

CHANGING OUR PRACTICE

So how do we support students in developing a disciplinary reading practice? There's a lot to unpack when we say we want to train our students in disciplinary reading, as well as in being able to read something outside the discipline. Where do we start? As a result of this project, we are all more explicit about what successful reading looks like in different disciplines when working with our students. For example, Scott spends more time describing what reading like a historian means and how it may differ from how people in other disciplines read. We spend time in class modeling reading behaviours. For example, Jon shows his students how to approach the subsections of scholarly articles. We emphasize the purposes of reading. Jodi asks her students to position themselves as both learners and teachers as they work through texts while Brett emphasizes the purposes of different genres. We try to create opportunities for students to reflect on their own reading practices across the disciplines.

CLOSING THOUGHTS

We struggled with what to call this section: a discussion on discussion seemed redundant; it's not really a conclusion because there are so many more areas to discuss and explore. Indeed, we have an ever-expanding list of questions about disciplinary reading: how and when it's taught; how we can leverage already existing institutional resources; what the connections are between disciplinary reading and disciplinary writing; whether our experience of disciplinary reading is in fact representative of the discipline. After all, we're just a small group of instructors from one institution. We also have so many questions about interdisciplinary and transdisciplinary reading, including the role of general education or liberal education, the increasing number of interdisciplinary programs and how they can support students' reading, the experiences of undergraduates who move between radically different courses with different reading expectations, and the role of assessment in encouraging particular reading behaviours. We are nowhere near ending our conversations.

Before we close this piece, however, we wanted to share a few thoughts about the power of our interdisciplinary conversations and a few suggestions for those readers who might want to try something similar in their contexts. Our ongoing conversation has allowed us to explore intellectual connections about a subject we care deeply about, but there is also an affective element. We are not close friends outside of this project, but we enjoy each other's intellectual conversation and respect each other's expertise even as we know remarkably little about each other's fields. This project wouldn't have worked if a member had been dismissive of others. Trust is also an important element for any collaborative work, and we have tried to be transparent in our dealings with each other. We have also tried to

be compassionate with each other, as life and COVID got in the way of the best laid research plans.

For those readers who might want to begin their own interdisciplinary conversations about reading or other topics, we suggest the following:

- Consider the power of personal invitation. Karen invited people from different disciplines whom she thought might be interested in the project. She also thought about who might be able to influence their home disciplines. It would have been a different, although still valuable, experience to send an open invitation for a community of practice. A community of practice would be a nice second step as it would be a way to increase capacity and reach a larger number of disciplines.
- Recognize the power of different types of conversations, including written ones. Pre-COVID we regularly met in person to discuss our reading practices, but even then we were using collaborative online documents to comment on each other's written reflections. Most recently we experimented with synchronous commenting on written reflections, and it was fun to watch the conversations develop in written form in real time. Recognize also that conversations develop over time, as do relationships.
- Value the power of learning, not only for our students but for ourselves. We have learned so much about each other's disciplines, our own disciplines, and our assumptions about reading, about learning, and about how knowledge is created. The journals and books that we read influence how we think. We become who we read. Similarly, as we listen and learn about each other's traditions, we allow ourselves to grow. We are very grateful for these conversations.

In many ways, this process of discovery through interdisciplinary conversation exemplifies the power of SoTL to change the teaching and learning environment by changing those who engage in it. SoTL has long been conceptualized as a cross-disciplinary endeavour; Huber and Morreale (2002), for example, created the metaphor of a "trading zone" to explain how SoTL scholars borrow and learn from each other's disciplines, but this metaphor may be, we suggest, too transactional. Rather than a trading zone or marketplace, where we come to get something specific, we need ongoing conversations based in respect (Poole, 2013). Through these conversations, we not only learn about our disciplines and ourselves; we also are offered the opportunity to look beyond current structures and practices to imagine different, richer possibilities.

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