THE SOTL GUIDE

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The SoTL Guide

(Re)Orienting the Scholarship of Teaching and Learning

Nancy L. Chick, Peter Felten, and Katarina Mårtensson

Center for Engaged Learning at Elon University
Elon, North Carolina

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Center for Engaged Learning at Elon University
Elon, North Carolina
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CHAPTER 7

Designing Your Inquiry

So far, section 2 of this book has guided you in reflecting on the teaching and learning issue you'd like to better understand, the kinds of questions you might ask, the literature that should inform your inquiry, and the ethics of your dual role as both teacher and SoTL inquirer. To explore the terrain of SoTL project design, this chapter will describe and illustrate two overarching SoTL designs aligned with Hutchings's *What is?* and *What works?* questions (2000, 4). The chapter also includes a possible step-by-step outline for an inquiry with both of these two questions.

Our attention to project design focuses on these question types for a couple of reasons: (1) as we pointed out in chapter 4, they're the most common, and (2) projects that can be categorized as "visions of the possible" and "formulating new conceptual frameworks" are typically *designed* as comparisons based on some kind of intervention or descriptions of something that happens—so their inquiry design tends to mirror either *What is?* or *What*

works? (2000, 4–5). At the same time, we don't want to oversimplify these two designs: as you'll see in the variety of examples we share, there's room for great variation within each, and they support a diverse range of SoTL inquiries and SoTL scholars. They also aren't the only possible ways to organize your project. You don't need to follow in others' footsteps, but you also don't have to reinvent the wheel.

Before we dig in, we want to briefly return to one of SoTL's foundational metaphors to frame our approach to project design.

Designing for "The Trading Zone"

This stage of developing a SoTL project is a good time to revisit a persistent challenge in SoTL. Stephen Bloch-Schulman, Susan Wharton Conkling, Sherry Lee Linkon, Karen Manarin, and Kathleen Perkins (2016), humanities SoTL scholars from the US and Canada, have shown that "even from the beginning, SoTL had a conflicted relationship with its own intellectual diversity" (109). In "The SoTL Space" section in chapter 3, we described SoTL's tenet of welcoming contributions from across the disciplines, creating a vibrant and diverse "trading zone" of insights, perspectives, methodologies, and practices (Huber and Morreale 2002, 73; Mills and Huber 2005). Yet this variety also can be vexing because most of us are trained in disciplines that not only have traditions and practices for conducting research, but also are rooted in deep (and sometimes implicit) beliefs about the nature of knowledge and reality—what some scholars call ontology, epistemology, paradigm, or worldview (Miller-Young and Yeo 2015; Berenson 2018; Haigh and Withell 2020; Steiner n.d.). This diversity means that you'll likely encounter "alien epistemologies, methodologies, and concepts" as you engage in SoTL (Simmons,

Deshler, Kensington-Miller, Manarin, Morón-García, Oliver, and Renc-Roe 2013, 12).

To honor the inherent exchange in the "trading zone" of SoTL, we encourage you to bring an open and curious mindset to the project designs and methodological choices you and others make. If you find yourself having a negative initial reaction (e.g., you might think "an exploration of a single student's writing is not rigorous" or "all of these statistics are incomprehensible"), pause and take a few minutes to reflect. What assumptions about knowledge, learning, and research are guiding your SoTL inquiry? What might those assumptions enable you to understand, and what might they constrain? As Bloch-Schulman, Conkling, Linkon, Mandarin, and Perkins (2016) explain:

> If SoTL is to engage faculty across the disciplinary spectrum, it must embrace all kinds of research, including focused, controlled studies that yield statistical analyses and projects that tell significant stories about student learning and that emphasize interpretation, process, creativity, and theory. SoTL would be more inclusive, more interesting, and more significant if, rather than attempting to enforce methodological conformity, we recommitted to the original ideal of disciplinary diversity and exchange. (110)

You may not always feel you have firm footing in the varied terrain of SoTL. We certainly don't. That can be unsettling, but it's also exciting. Mel Hamilton and Brett McCollum (2024) urge SoTL scholars to lean into this discomfort by being explicit about the epistemological and ontological traditions that undergird our inquiries; doing that, they suggest, will help us understand what is actually happening in the SoTL "trading zone."

Ultimately, the methodological and epistemological diversity of SoTL supports a creative culture of teaching and learning (Fanghanel 2013) that not only helps each of us become better teachers, but also enables more (and more varied) questions and actions on the meanings and purposes of higher education, expanding what Booth and Woollacott (2018) call the "horizons" of SoTL to include the disciplinary, professional, cultural, and political.

Designing a *What is?* Inquiry

To Hutchings, *What is?* SoTL projects aim "not so much at proving (or disproving) the effectiveness of a particular approach or intervention but at describing what it looks like, what its constituent features might be" (Hutchings 2000, 4). This kind of analysis produces what some qualitative researchers call a "thick description" that offers rich contextual and observational details (Geertz 1973, 310). The power of a *What is?* inquiry does *not* come from generalizability, but rather from "representing complexity well" (Poole 2013, 141), or the way it represents learning and context in nuanced ways (Huber and Hutchings 2005; Chick 2024). These projects can take many forms, but most begin with a simple and humbling realization: as a teacher, I don't understand what my students think, know, or do in a specific situation (or perhaps more broadly). Let's look closely at a few examples so these ideas aren't so abstract.

What Is? Example 1

Johannes Bester and Eric Pretorius (2022) asked *What is?* in a large-enrollment, first-year civil engineering module on concrete technology at a university in South Africa. Recognizing that

"pure content dissemination and recall is no longer sufficient" in engineering education, they weave together experiential activities and guided reflection designed to help students cultivate "employability skills and professional attributes that include skills for new knowledge generation, application of knowledge, values, and reasoning abilities" (111). Bester and Pretorius analyze individual writing by nearly 200 students to better understand the characteristics of "deep" and "shallow" reflection in their context, using literature and theory on reflection to guide their analysis. Their study allows them to better see—and then teach to students—the characteristics of deep reflection in civil engineering, which prepares students to thrive at university and as professionals.

What Is? Example 2

Unlike Bester and Pretorius's larger study of 200 students in South Africa, Holly Hassel and Joanne Baird Giordano (2009), who taught writing at a college in the US, did a smaller study of fourteen first-year students but used a more complex project design. They focused on what they describe as an "often-ignored student population": new undergraduates who don't demonstrate the critical writing and reading skills necessary to be placed in the required university-level writing course (25). Since these students couldn't graduate without passing this course, Hassel and Giordano wanted to better understand where these students struggle at the end of the first-semester preparatory writing course to better support them before they moved on to the required course.

To explore this question, they designed their project to use the course writing rubric to analyze all fourteen students' final papers from one preparatory class (see Phase 1 in figure 7.1). This process surfaced a general pattern, but not enough information

to satisfy them, so they shifted to an in-depth analysis of three students' final papers from the first-semester preparatory course and first papers from the second-semester required course (see Phase 2 in figure 7.1).

Phase 1 revealed that most of the fourteen students wrote with "an incomplete understanding of academic writing conventions" (34), which would set them up to struggle in a subsequent required writing course and later when they write in future courses across disciplines. Phase 2 revealed the specific student difficulties of using conventions of formal writing, developing an informed argument (rather than summary and opinion), and engaging directly with readings from their own research. This careful, close attention to student writing mirrors the authors' disciplinary work of closely reading texts and allows them to make specific and important observations about *what is really happening*

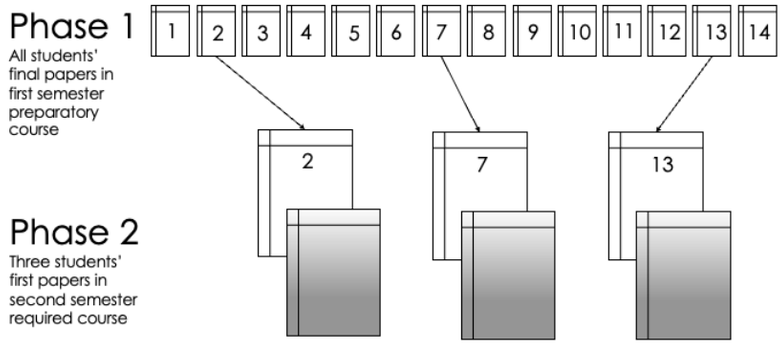

Figure 7.1. Hassel and Giordano's project design. *Phase 1*: Use course rubric to analyze final papers by all fourteen students in first-semester writing course: Where did they do well, and where did they still struggle? *Phase 2*: Closely read three students' final papers in the first-semester course and then their first papers in the second-semester required course: In addition to Phase 1 questions, what writing skills did they transfer to the second course? Adapted from Hassel and Giordano (2009).

with these students. The project's complex insight demonstrates the power of such exploratory, descriptive inquiries designed to get under the surface of students' learning—and also to offer clues about how academic teachers might adapt their pedagogy to support deeper, more enduring student learning.

What Is? Example 3

To explore a *What is?* SoTL question in multiple national contexts, Jennifer Hill, Kathy Berlin, Julia Choate, Lisa Cravens-Brown, Lisa McKendrick-Calder, and Susan Smith (2021) designed an inquiry at relatively similar (in size and mission) universities in Australia, the UK, and the US, exploring undergraduate students' emotional responses to instructor feedback on their course work. The project team used semi-structured small group interviews with twenty four students and, separately, six student-authored reflective journals responding to prompts like those asked in the interviews. They coded these qualitative sources to identify themes, finding perhaps most significantly that, across contexts, "feedback is taken personally by students"—even if that feedback is focused on the work rather than the person—and that this emotional interpretation of feedback influences a student's learning experiences in and beyond the course (301). They also found that "feedback evokes strong emotions in students at all levels of undergraduate study, across multiple subjects, and irrespective of the national regulatory environment in which the institutions are seated" (310). Like many other *What is?* inquiries, by digging into students' experiences, this project has implications for teaching and assessment in diverse contexts (311–313) even though it does not reveal—or attempt to understand—*what works*.

. . .

These three examples illustrate the basic outline of a SoTL project design that explores *What is?* Of course, the design of each project is complex and often evolves over time, but at some level *What is?* projects tend to have a rather simple, perhaps even elegant, design:

1. Begin by identifying something related to student learning that matters and that you want to understand more deeply. There are many possibilities for this "something." Looking back at your SoTL entry points (chapter 3), you may start with a curiosity, a problem, an aspect of students' prior knowledge, a belief about their learning, something specific to your context, some variation among students, a gap in existing research, or one of your commitments.
2. Think about what you want to know about this "something," and develop your SoTL question (chapter 4). If you want to know what this "something" looks like, you're in the right place. Consider how your question is—or could become—meaningful, as well as how you can make it more precise to your context (i.e., *when*, *where*, *for whom*).
3. Situate your inquiry within the relevant literature (chapter 5) to clarify and sharpen your question, and to identify the approach and activities that will help you answer your question (i.e., your methods).
4. Critically reflect on the ethical considerations of your project (chapter 6).
5. Identify the relevant learning experiences or moments that will answer your question (e.g., comments in a specific in-class discussion, responses on a quiz or paper).

6. Gather examples of student work that can be used as evidence or artifacts that help you answer your question (chapter 8 will guide you through this step).
7. Analyze student work in a way that responds to your question, using your own disciplinary training and the relevant scholarly literature as a guide (chapter 9 addresses your analytical approach).
8. Reflect on what you've learned through this process. How is it meaningful, helpful, and important to you, to students (yours and others'), to colleagues (near and far), or perhaps beyond any educational institution?
9. Turn your reflections into a contribution (chapter 10)—both to yourself, by applying what you've learned in your teaching, and to others by sharing with your colleagues and students.

Designing a *What Works?* Inquiry

The other question that also sets up a common SoTL project design asks, *What works?* Pat Hutchings (2000) notes that, "not surprisingly, this is where many faculty begin seeking evidence about the relative effectiveness of different approaches" of teaching because problems of practice so often motivate SoTL (4). She also underscores that *What works?* questions almost always have "a ready audience, an element much to be wished for in this and other forms of scholarship," since it promises to offer concrete guidance on how to be more effective (4).

What Works? Example 1

Victoria Holec and Richelle Marynowski (2020) wanted to understand whether the physical classroom at their university in western

Canada influenced student engagement with active learning. They build on deep literature about the efficacy of active learning, and also on their own experiences of teaching in classroom spaces that are more or less conducive to this pedagogical approach. Because Marynowski was scheduled to teach two sections of the same course in two very different rooms (one designed as an active learning classroom and one configured as a traditional lecture theatre; see figure 7.2), they decided to conduct a *What works?* inquiry comparing the two. Marynowski also taught both sections the same term, so she could ensure the course design, her teaching approaches, and the context of the course were essentially the same, making the classroom space a salient distinction between the two learning experiences. Their inquiry revealed that "learning environment matters to achieve improved results for student-perceived engagement" (154). They found that

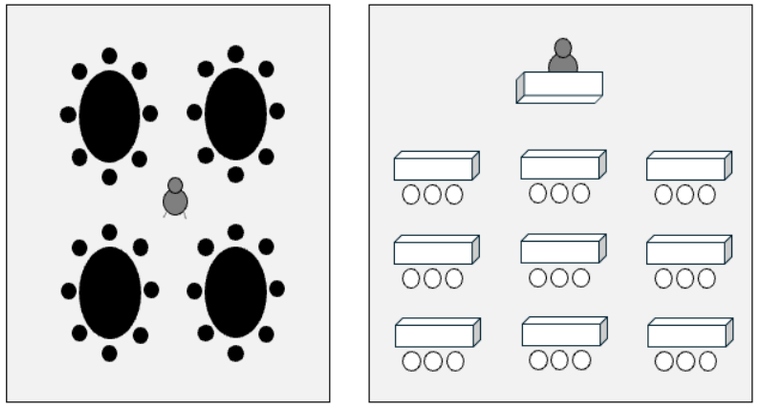

Figure 7.2. Holec and Marynowski's project design. The teacher, the course design, teaching approaches, and context are essentially the same (gray); the students and the physical classroom are different (black and white). Adapted from Holec and Marynowski (2020).

student-perceived engagement was also relatively high in the traditional lecture classroom, underscoring the significant influence of the course design, instructor, and pedagogy no matter the physical space; however, they also found that the active learning classroom made a real difference in self-perceived engagement reported by the students and the instructor (155). In short, this inquiry shows that in this context, teaching with active learning *works* better (as measured by self-perceived engagement) in a classroom designed for that pedagogy.

What Works? Example 2

Rather than inquiring into student perceptions, Holly Swanson, Adelola Ojutiku, and Bryan Dewsbury (2024) ask a *What works?* question about student metacognitive behaviors at a US research university. Metacognition, or the ability to accurately assess one's own understanding, has been shown to be crucial for student learning and success in higher education. More than 1,000 undergraduates at this university participated in a workshop designed to cultivate their metacognitive study practices. All workshop participants then had the opportunity to join a four-week online program that "scaffolded, reflective opportunities to extend the impact of the workshop" (4). Swanson and her coauthors gathered qualitative and quantitative data from the more than 200 students who completed the program, comparing them to some 160 students who began but didn't complete it. They "found a correlation between completing the intervention and a higher semester GPA [Grade Point Average], regardless of student identity, prior academic performance, [or study] strategy choice" (12). In other words, at a basic level, the four-week online program *works*. Yet the differences between "completers"

and "non-completers" might primarily be linked to the level of student motivation overall, so those differences might simply highlight the importance of motivation. To unpack that possibility, Swanson, Ojutiku, and Dewsbury analyzed their data further and discovered that, regardless of motivation, "completion of the multiple reflective opportunities can improve student academic success across all student identities" (13), suggesting that the metacognitive behaviors practiced in the four-week program matter for all students.

These two examples illustrate the basic steps of a *What works?* SoTL project design. At a high level, the steps to develop these projects parallel *What is?* as the design of each is complex and often evolves over time, but the nature of a *What works?* question changes how you implement each step:

1. Begin by identifying something related to student learning that matters and that you want to understand more deeply. There are many possibilities for this "something." Looking back at "Where to Start" (chapter 3), it can be a curiosity, a problem, an aspect of students' prior knowledge, a belief about their learning, something specific to your context, some variation among students, a gap in existing research, or one of your commitments.
2. Develop your question by considering what you want to know about this "something" (chapter 4). For *What works?* questions, you're probably looking for some kind of change, or demonstration of effectiveness, or some other comparison. Don't forget to consider how your question is—or could become—meaningful and how you can make it more precise to your context (i.e., *When?*, *Where?*, *For whom?*).
3. Situate your inquiry within the relevant literature (chapter 5) to clarify and sharpen your question, and to identify the approach and activities that will help you answer your question (i.e., your methods).
4. Critically reflect on the ethical considerations of your project (chapter 6).
5. Identify the relevant comparisons that will answer your question (e.g., between "completers" and "non-completers" in a course, between students this term and students in a prior term).
6. Gather examples of student work that can be used as evidence or artifacts that help you answer your question (chapter 8 will guide you through this step).
7. Analyze that student work in a way that responds to your question, using your own disciplinary training and the relevant scholarly literature as a guide (chapter 9 addresses your analytical approach).
8. Reflect on what you've learned through this process. How is it meaningful, helpful, and important to you? to students, yours and others'? to colleagues, near and far? perhaps beyond any educational institution?
9. Turn your reflection into a contribution (chapter 10)—to yourself by applying what you've learned in your teaching and to others by sharing with your colleagues (and with your students).

Designing Your Inquiry in Context

Now that we've sketched the broad contours of the two most common SoTL project designs, let's get specific to your inquiry. At this point, revisit your plan and make sure you've articulated the particularities of your context by responding to those crucial modifiers *where?*, *when?,* and for *whom?* Put even more simply:

- If you're designing a *What is?* project, you're really asking *What is here?* and *What is with these students?* and *What is now?* Take a few moments to write some notes on where here is, who these students are, and when now is.
- If you're designing a *What works?* project, you're really asking *What works here?* and *What works with these students?* and *What works now?*, so write some notes on where "here" is, who these students are, and when "now" is.

These elements of your inquiry's context matter, which is one reason why we include relevant aspects of context for the SoTL projects we describe and cite. A SoTL inquiry might have broad implications, but it is by definition rooted in a place and time involving people in cultural and institutional contexts. You'll want to remember these contexts as you conduct your project and as you share your work.

We hope the examples and guidance above help you design a SoTL inquiry that responds to what you want to know and that the variety of sample studies in the sections above illustrates the range in size, scope, contexts, and more that are welcome in SoTL's "trading zone." The next chapter will help you plan to collect the "traces of learning" that will be at the heart of your inquiry.

Questions for You

We invite you to explore these questions in individual reflection or collegial conversation:

- Do you and your disciplinary peers tend to design research projects that look more like *What is?* or *What works?* What do you see as the strengths, and the weaknesses, of that kind of SoTL question?

- Try reorienting your inquiry with a different starting question—if your question currently is *What works?* then try *What is?* or *What if?* What do you notice about your question—and your inquiry—when you start with a different kind of question?

Supplemental Materials

- Worksheet: Designing Your Inquiry
- Video: Three faculty describe diverse examples of SoTL projects in this video (5:00) produced by the Center for Engaged Learning