

THE SOTL GUIDE

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The SoTL Guide

(Re)Orienting the Scholarship of Teaching and Learning

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Meaningful SoTL Questions

“Every scholarly and professional field is defined by the questions it asks.” —Pat Hutchings (2000)

Meaningful inquiry begins by asking meaningful questions. Although we understand what makes something significant in our disciplinary work, that judgment may be less clear in the context of SoTL. We also know that disciplinary research needs to have implications for others in our field. The same is true for SoTL, but how do we make something as individualized—and even idiosyncratic—as what happens in our classrooms meaningful to someone else? Who are the other people who’ll find our inquiry meaningful? What questions may be relevant to both ourselves and others?

What Is “Meaningful”?

In “Learning Matters: Asking Meaningful Questions” , Anthony (Tony) Ciccone (2018), former director of Carnegie Academy for the Scholarship of Teaching and Learning (CASTL), offers some guidance on how to ask questions that are meaningful to ourselves and others. (See box 4.1 on the origin of this guidance.) He identifies five characteristics of SoTL questions that “matter”:

1. they “arise from a troubling, surprising, or perplexing teaching and learning experience that seems to defy a simple solution” (16),
2. they are “truly consequential to us as teachers and to our students as learners” (17),
3. they compel us “to gather new and different information about our students’ learning or at least look differently at what we’ve been getting and thus to teach and assess differently” (17),
4. they “raise more questions than [they] answer and thus invite further research” (19), and
5. they have “the potential to go beyond the problem from whence [they] arose to elucidate some key insights into big issues about student learning and the frameworks that would explain them” (20).

Ciccone’s list underscores how “particularities” often drive meaning (Shulman 2014). Determinations of what’s *troubling*, *surprising*, *perplexing*, *consequential*, or *new and different* are situated within a particular perspective (the teacher’s), local context (the specific learning environment, the content taught, the student group), and moment in time (now). You saw in the previous chapters that SoTL inquiries are often—and ideally—grounded in

what’s meaningful to the practitioner, and entry point 5 ([chapter 3](#)) illustrated the influence of a specific context on teaching, learning, and SoTL. When COVID-19 prompted higher education to suddenly switch to remote instruction, questions about students’ well-being, home environments, and digital access became more meaningful for many academic teachers and institutions (Cruz and Grodziak 2021).

Ciccone also stresses that effective SoTL questions don’t lead to easy answers, quick fixes, or closure, a reminder that some SoTL problems are “wicked.” This may be unsettling for some. Indeed, recall Halpern’s (2023) critique of published SoTL that too often tells a story of “linear progress and endless self-improvement” (13). While simple explanations can be tempting, SoTL tends to embrace complexity because students and student learning are complex ([see chapter 2](#)). SoTL is most meaningful when it dives into the difficult and messy nature of learning.

BOX 4.1

Nancy’s Orientation to SoTL Questions

Much of this chapter is inspired by Tony Ciccone’s suggestion that the most important step in developing a SoTL project is its question. In fact, I learned how to do SoTL in the statewide program he facilitated across twenty-six campuses in the US, and the beginning of the program brought the participants together for five days. One of those days was devoted *entirely* to workshoping everyone’s question. This experience is why I later invited him to write his chapter, “Learning Matters: Asking Meaningful Questions” in my edited book on “critical moments of practice” (Ciccone 2018).

And, of course, our experiences with teaching are complex, too. If teaching and learning were simple, we could answer our SoTL questions by asking a colleague or just following our intuition in the classroom. Even when we start a SoTL journey with what might seem like a simple question, the inquiry process typically leads us into more challenging terrain (see box 4.2 for Peter's experience with such terrain).

Ciccone's description of meaningful SoTL questions as "truly consequential" resonates deeply with us. SoTL's attention to holistic conceptions of learning and the entire learning experience strikes us as highly consequential. For example, one Canadian and three South African scholars—Elizabeth S. Ndofirepi, Raazia Moosa, Maureen J. Reed, and Mandivavarira Maodzwa-Taruvinga—developed a novel inquiry comparing nearly 850 students at two urban universities in their two countries (2023). Because the

BOX 4.2

Peter's Evolving Questions

When I wanted to understand why my advanced history undergraduates struggled to analyze visual but not textual sources, I ended up exploring not only what students do when they encounter primary sources (my original question) but also the ways that their prior knowledge and beliefs shape their approaches to meaning-making in history (Felten 2005). As Ciccone suggested, I didn't find an easy fix to the problem of students struggling to make sense of visuals. However, by better understanding the complexities of students' learning, I have been able to develop new classroom exercises designed to help students recognize their assumptions about images before they begin to engage with them as primary sources.

learning experiences and outcomes of first-generation students are profoundly shaped by the academic and personal roles they must juggle as students (e.g., family care responsibilities or the need to work), these scholars designed their inquiry to explore questions about:

- (1) the multiple types of roles that are experienced by first-generation students relative to their peers;
- (2) the relationship between the perceived ability to balance multiple roles and academic outcomes (academic self-efficacy, university adjustment, and grades) in first-generation and non-first-generation students and;
- (3) the relationship between the perceived ability to balance multiple roles and psychosocial variables (academic resourcefulness and resilience) in first-generation and non-first-generation students. (Ndofirepi, Moosa, Reed, and Maodzwa-Taruvinga 2023, 24)

As illustrated in this example of inquiry into the impact of culture in Canada and South Africa on the educational experiences of these students, SoTL questions are consequential when they inquire into the intersections between teaching and learning and the significant challenges facing communities and the world—or what Boyer called the "public good" (1987, 119). Richard Gale (2009) frames these important "questions of value" as those that "speak to and influence issues of significance to society, addressing our values writ large, what we need to understand as members of a local, national, global community" (7). Carolin Kreber (2013) calls on us to do SoTL "as if the world matters" because "questions around what our students learn, who they become, and how they choose to engage with the world once they graduate from university matter fundamentally to the well-being of our local communities and wider society" (13, 68).

Recall, for example, Parker-Shandal’s (2023) study of class participation by students with marginalized identities (in [chapter 3](#)), to name just one. The significance here comes from the nature of the questions you ask, not from the size of the project or the number of participants.

A Taxonomy of SoTL Questions

Pat Hutchings, a leader at the US’s Carnegie Foundation who played a pivotal role in SoTL’s early evolution, together with Mary Huber and Lee Shulman, developed a taxonomy of SoTL questions that’s frequently used to frame SoTL projects by identifying the instructor’s “opening lines’ of inquiry” where a study starts to take shape (2000, 1; see also [Hutchings describing the taxonomy](#)). She identifies four types of SoTL questions, specifically those that ask about “what works” or “what is,” those that begin with “visions of the possible,” and those that generate “a new conceptual framework for shaping thought about practice” (2000, 4–5; see table 4.1).

The first two types of questions in this taxonomy are usefully simple as a heuristic for SoTL’s inclusion of efforts to both *improve* and *understand* learning and teaching.

- *What works?* questions lead to comparative studies aimed at implementing an intervention, testing a potentially better strategy, and trying to fix a problem. For instance, earlier in this chapter we described how Ndofirepi, Moosa, Reed, and Maodzwa-Taruvunga (2023) ask questions about “what works” to support first-generation students in different university contexts.
- *What is?* questions lead to nuanced descriptions designed to reveal something about learning and teaching, in all of their complexities. Recall from [chapter 3](#) the Cooper and

Question Type	Description	Question Stem
“what works”	“seeking evidence about the relative effectiveness of different approaches”	<i>What works?</i>
“what is”	“describing what it [a particular approach or intervention] looks like, what its constituent features might be”	<i>What is?</i>
“visions of the possible”	wondering what if? in trying something that’s new (or new to you)	<i>What if?</i>
“formulating a new conceptual framework for shaping thought about practice”	leading to a new way of understanding something, or “theory building”	<i>What does this ultimately help us understand?</i>

Brownell (2016) article that asks “what is” the experience of LGBTQIA+ students in an active learning biology class. The third and fourth types are less simple but no less valuable.

- *What if?* questions inspire projects that start with a sense of play or experimentation in trying something to see what

happens, with no expectations of what those consequences might be. In terms of how these projects are ultimately designed (more about this step in [chapter 7](#)), they tend to be structured as comparisons of before and after the “something” (similar to *What works?*) or narrative descriptions of what happens (similar to *What is?*). For example, Mariolina Salvatori (2000) began a SoTL inquiry by asking what if students could make visible their struggles with complex literary texts; to explore this question, she developed a “difficulty paper” that prompted students to describe and analyze their struggles (more on this in [chapter 7](#)).

- Projects that lead to “new conceptual frameworks” rarely begin with that intention. They may begin with one of the other question types but, sometimes accidentally, produce a new way of making sense of something. Dianne Fallon’s (2006) seemingly simple inquiry about what is “reveal[ed] about students connect class content to the world around them” in a single assignment led to surprising results, so her puzzlement inspired her to create a developmental “taxonomy of diversity learning outcomes, behaviors, and attitudes” based on how her white students in a majority-white state in the US responded to talking about race in class (411, 414).

In our experiences doing and supporting SoTL projects, hearing about them at conferences and other events, and reading about them in published form (Booth and Woollacott 2018; Manarin, Adams, Fendler, Marsh, Pohl, Porath, and Thomas 2021), the majority of SoTL projects follow questions about *What works?* and *What is?*.

Based on these experiences, we offer a nudge. Despite an eagerness to try out something that might improve student learning, *What is?* questions that seek understanding are often

the best place to start a SoTL project. In fact, recalling Poole’s (2018) observation that we often base our assumptions about our students on faulty or incomplete information, perhaps one of the most important questions we can ask in SoTL is, “What is *really* happening here?” (Chick 2024). If we try to improve or fix or intervene based on incorrect assumptions, we may change nothing—or even make matters worse.

A helpful illustration comes from Annika Fjellkner Pihl’s (2022) study of students in a business program that attracts students from non-academic backgrounds, as well as many who commute for about one hour to get to campus. Fjellkner Pihl, an experienced teacher at a teaching-intensive institution in Sweden, observed that students clustered together in various groups in the classroom:

I see them form pairs and groups. I see them struggle, and subconsciously seem to know which of the students will do well, seemingly without an effort on my part, which of them will have to struggle but will get there in the end, and which of them will probably do everything backwards or not at all and will try to argue their way to a pass grade anyway.” (Fjellkner Pihl 2022, Prologue)

A year later, she met the same students, but fewer now, and noticed that “about half the group sit with fellow students they seem to know very well, grouped together in the front half of the lecture hall. Scattered around the outskirts of that group are other students, who sit alone or in pairs, but seemingly demonstratively outside the larger group” (Fjellkner Pihl 2022, Prologue). Based on this observation, she embarked on exploring (and eventually wrote a dissertation on this topic) the student-student relations by asking *What is really happening here?*: how do these students form their own personal networks and how do these student

networks influence their academic achievements? She then used what she learned from this project to develop a model for supporting students to develop more diverse study networks to support their academic achievements. Like many *What is?* SoTL inquiries, her question evolved over time as she learned more; as Fjelkner Pihl's example illustrates, sometimes a seemingly simple question can unfold into a long-term and consequential inquiry.

That's not to say you should avoid *What works?* questions. Many of us do SoTL because we want to get better at teaching, and we want our students to learn more deeply and enduringly. In fact, one of SoTL's goals is to improve teaching and learning in a certain context (see [chapter 1](#); Larsson, Mårtensson, Price, and Roxå 2020). Knowing *what works* matters. However, these questions can be challenging to answer in a satisfying way. You might, for instance, teach so few students that comparisons are difficult, or maybe you don't feel comfortable setting up a rigorous comparison that gives only some of your students a specific benefit (e.g., regular active learning exercises, study groups, meta-cognitive activities) but not others (Bunnell, Felten, and Matthews 2022). Our point is simply that you should critically reflect on just how well you know *what is* before you jump into trying to figure out *what works*.

Extending Hutchings's Taxonomy: SoTL Questions in Context

Hutchings's taxonomy is a helpful place to start with framing your SoTL question, but there are a few ways to get more specific that we encourage—that is, by also asking, *Where?*, *When?*, and *For whom?* (see figure 4.1). These additions carry forward our emphasis on the importance of context by changing the nature

of the questions you ask, and your particular context may call for very particular questions. Chng Huang Hoon, Katarina Mårtensson, and Brenda Leibowitz suggest that—since SoTL always occurs in “geographical, social, cultural, and political” and temporal contexts—every *What is?* or *What works?* question should include the modifiers *Where?* and *When?* (Chng, Mårtensson, and Leibowitz 2020, 25). By comparing their experiences of supporting and leading SoTL initiatives in Singapore, Sweden, and South Africa, they demonstrate how each context produces different challenges related to commonly assumed perspectives on teaching and learning, language translations, and political issues.

An additional aspect of context, perhaps implied by *Where?* and *When?* but worth making explicit, is *For whom?* Like the other modifiers to Hutchings's questions, this one reminds us that

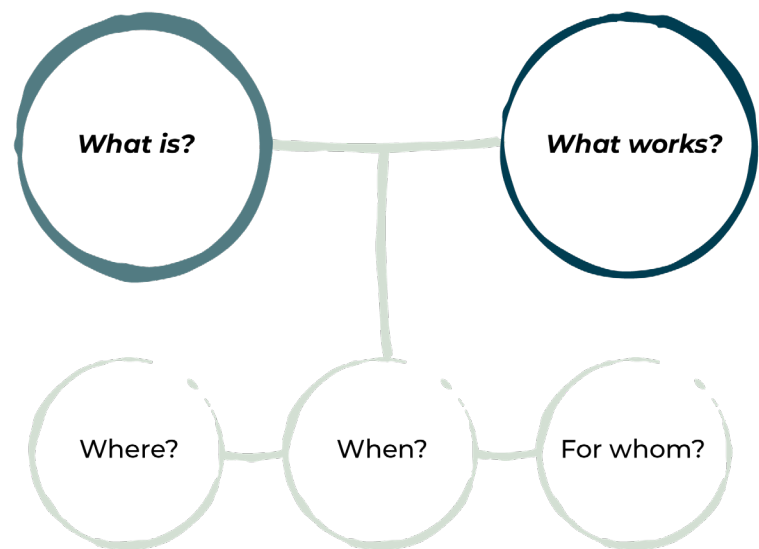


Figure 4.1. Extending Hutchings's taxonomy to include contextual questions *Where?*, *When?*, and *For whom?* Conceptualization by the authors, building on Hutchings (2000) and Chng, Mårtensson, and Leibowitz (2020).

experiences and identities vary—and matter—in teaching, learning, and inquiry. Plenty of research suggests that even students in the same program and class experience teaching and learning differently. For example, although the efficacy of active learning pedagogies in STEM courses is well documented, questions persist about whether those benefits hold for all students. Cooper and Brownell’s (2016) interviews with seven students who identify as LGBTQIA+ at their university in the US in the early-to-mid-2010s surfaced many specific ways in which these students struggle—and struggle differently—with active learning in class, not the least of which includes fears about how their classmates will respond to them in these more interactive class experiences. Similarly, in interviews with twenty-five students with common “neurodevelopmental disorders” (e.g., ADHD and dyslexia) at their university in the US, Mariel A. Pfeifer, Julio J. Cordero, and Julie Dangremond Stanton (2022) found significant variation in experiences with active learning. Both inquiries grounded in asking *what works for whom?* helpfully identifies barriers to these specific students’ learning, leading to recommendations for how to minimize barriers for LGBTQIA+ and neurodivergent students.

And, of course, these extended questions don’t have to be just about the students in a course. Who conducts the inquiry—their identities, their specific location, at which moment in time—matter as well. In an international, collaborative, autoethnographic SoTL project, Nattalia Godbold, Dawne Irving-Bell, Jill McSweeney-Flaherty, Patrice Torcivia, Lauren Schlesselman, and Heather Smith (2021), from six institutions in Australia, Canada, UK, and the US, inquired into how aspects of their personal and professional identities influenced their experiences of SoTL. After

comparing their different personal narratives, they conclude that their reflections:

cannot be separated from our contexts and our positionality. As a group we differ in ages, career trajectories, disciplinary background, institutions, current positions, citizenship, and parenting responsibilities. We are all self-identified white women. We also acknowledge that our stories are constrained and limited by our experiences. (Godbold, Irving-Bell, McSweeney-Flaherty, Torcivia, Schlesselman, and Smith 2021, 385)

Their project reminds us that we ask questions and conduct inquiries informed by who, where, and when we are.

In figures 4.2 and 4.3, we illustrate Hutchings’s taxonomy and the *Where?*, *When?*, and *For whom?* extensions with some sample SoTL questions.

So What? Asking Questions That Are Meaningful to You and Your Students

This exploration of what makes SoTL questions meaningful might have complicated your thinking about SoTL inquiry. Given the situatedness of teaching and learning and SoTL’s expansive view of learning, we want to complicate SoTL inquiries enough to help you capture this reality by “representing complexity well” (Poole 2013, 141). Our hope is that this guidance also empowers you to focus on what is “truly consequential to [you] as teachers and to [your] students as learners” (Cicccone 2018, 17).

We also believe SoTL can and should be more attentive to how power shapes our teaching and our inquiries. Carolin Kreber (2013a) reminds us that the meaningfulness of SoTL questions

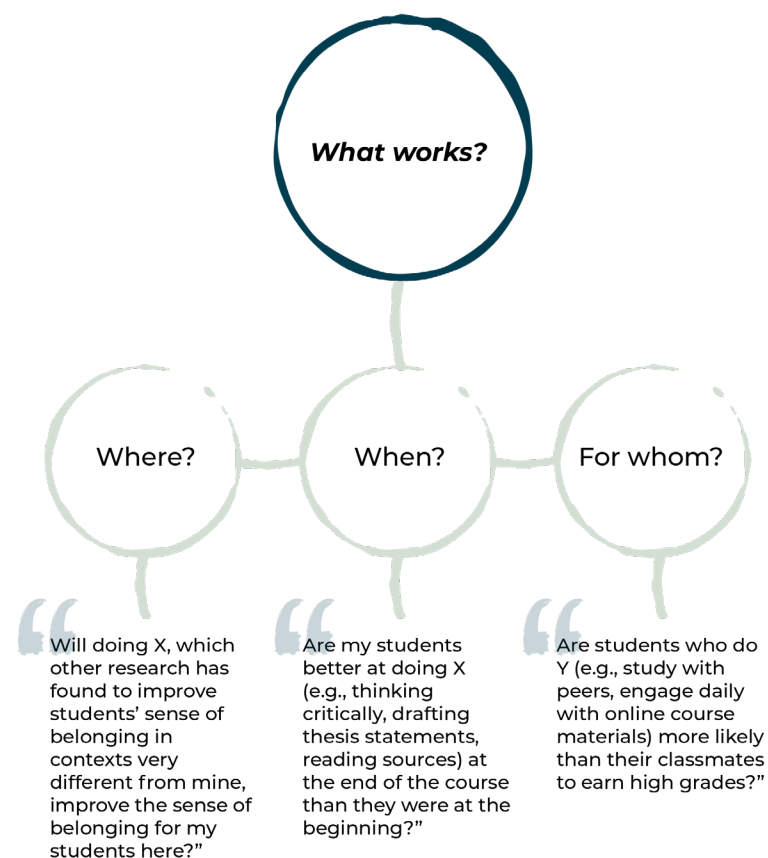


Figure 4.2. Sample *What works?* SoTL questions framed using Hutchings’s taxonomy and contextual extensions.

should be examined with a critical eye to *Why?* and *Why not?* and *Who decides?* (862). In other words, who gets to decide if a SoTL question is meaningful—and who doesn’t? Canadian scholars Janice Miller-Young and Michelle Yeo (2015) extend Kreber’s analysis by documenting that “Questions of power and privilege in the classroom largely go unasked, so far, in the SoTL landscape” (45). We hope that our work and your inquiries will help to reorient SoTL.

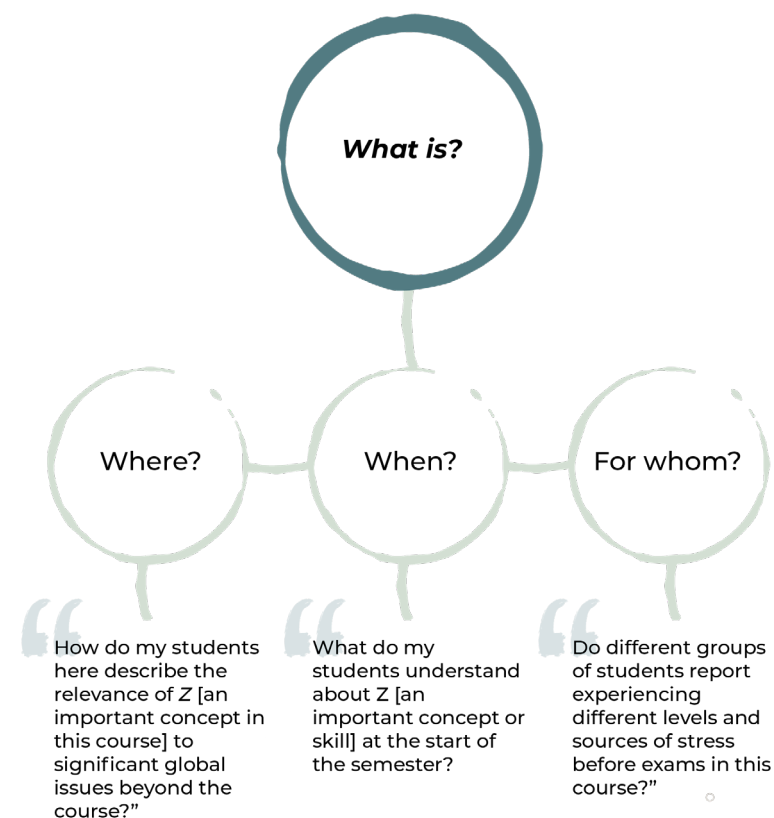


Figure 4.3. Sample *What is?* SoTL questions framed using Hutchings’s taxonomy and contextual extensions.

Finally, as you think about your SoTL questions, we encourage you to continue to ground yourself in your earlier reflections about why you do SoTL ([chapter 2](#)) and where you’re starting ([chapter 3](#)). We also invite you to reflect on what’s possible for you to achieve in SoTL in any given moment and in your particular context. As you’ll see in subsequent chapters, bigger is not necessarily better in SoTL inquiries. Inquiring into seemingly small issues, small moments in time, or even small numbers of students can be consequential if the question is meaningful.

Questions for You

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

- What SoTL questions come to mind after reading this chapter?
- What kinds of SoTL questions do you tend to ask?
- What do you notice if you play with your questions by reframing them (e.g., from *What Works?* to *What is?*) or by adding modifiers (e.g., *when*)?

Supplemental Materials

- [Worksheet](#): Nuanced *What Works?*
- [Worksheet](#): Nuanced *What Is?*
- [Video](#): Pat Hutchings talks about the taxonomy of SoTL questions in this video (3:48) produced by the Center for Engaged Learning at Elon University