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The Crossroads of SoTL and Signature Pedagogies

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CHAPTER 3

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The title of this book identifies its overarching goals as building community and sharing meaning and purpose. It aims to break down the ubiquitous academic silos that result in separations, tribes, and factions that create highly specialized research that can lack relevance to others, reinforce a "pedagogical solitude" that prevents educators from supporting each other and sharing solutions,[1] and inhibit the integrative thinking that's necessary for students in the twenty-first century.[2] In multidisciplinary teaching and learning communities, sums are greater than parts, and solutions arise at the intersections of differences. In this context, this chapter presents what may at first seem like a paradox: that self-reflection and self-knowledge are prerequisites for collaboration and community. The paradox is illusory and not new, as it invokes the ancient Greek call to "know thyself" in order to also know others.

Two powerful conversations for teaching and learning communities to both deepen group identities and cross group boundaries involve signature pedagogies and the Scholarship of Teaching and Learning (SoTL). As discipline-specific ways of teaching, signature pedagogies facilitate a heightened awareness and practice of how particular fields operate. At the same time, this awareness allows experts in one area to "orient themselves within the different disciplines just down the hall or a few buildings over and facilitate the cross-pollinating conversations" and "reach out across the disciplines to appreciate the professional differences—and similarities—within the academic community."[3]

Similarly, SoTL is a scholarly approach to inquiry about teaching and learning that often begins with disciplinary thinking: what it means to learn, to evidence or perform learning, and to document and evaluate learning in a specific course within a specific discipline. Yet SoTL, by its very multidisciplinary nature, is a "trading zone" where educator-practitioners are "simplifying, translating, telling, and persuading 'foreigners' to hear their stories and try their wares."[4] Exploring signature pedagogies and SoTL can thus improve the learning of both student and teacher, enhancing the metacognitive awareness and agility that can break down silos to build communities that share meaning and purpose.

Signature Pedagogies

Lee Shulman coined the term *signature pedagogies* to describe the ways some professions are taught, the ways of teaching "that leap to mind when we first think about the preparation of members of particular professions." He looked to the rapid-fire Socratic questioning "so vividly portrayed in *The Paper Chase*" to illustrate law school's familiar "case dialogue method of teaching, in which an authoritative and often authoritarian instructor engages

individual students in a large class of many dozens in dialogue about an appellate court case of some complexity."[5] With the goal of preparing students for a specific career, signature pedagogies "prefigure the cultures of professional work and provide the early socialization into the practices and values of a field," enacting its "habits of the mind, habits of the heart, and habits of the hand."[6] The law classroom prefigures the courtroom, with its reliance on memory of precedent and case law, intense debates, power differences, and high stakes. Shulman's illustrations of signature pedagogies are those that immediately leap to mind, in part thanks to popular culture's representations of these professions.

Traditional academic disciplines haven't been as fortunate. Historian Lendol Calder points out that teaching in his field has been canonized "in the 'Anyone?… Anyone?' history class scene in the movie *Ferris Bueller's Day Off*."[7] This experience of a dry history lecture focused on facts and fill-in-the-blanks is familiar enough that it's easily parodied for our entertainment. Beyond the exaggerations on screen, the conventional ways some disciplines are taught have more serious consequences, reinforcing common disciplinary misconceptions. Calder laments, "Students come to college thinking that history is what one finds in a textbook: a stable, authoritative body of knowledge that, when remembered, somehow makes the world a better place."[8] To counter this preconception, he redesigned his history survey by looking to Shulman: "a signature pedagogy, then, is what beginning students in the professions have but history beginners typically do not: ways of being taught that require them to do, think, and value what practitioners in the field are doing, thinking, and valuing."[9] Historians don't do regurgitation, think in facts, and value vague social improvement. Instead, Calder identifies "a basic set of moves" or "cognitive habits" that *are* characteristic of what historians do, think, and value—"questioning, connecting, sourcing, making inferences, considering alternate perspectives, and recognizing limits to one's knowledge"[10]—and builds these into the overarching structure, the first few days, the routines, and the final assignment in his history survey.

As Calder's example illustrates by focusing on the introductory survey in which some students are majors and many are not, signature pedagogies in academic disciplines don't necessarily seek to create future professionals (e.g., professional historians and history professors). They suggest that disciplinary ways of doing, thinking, and valuing are important for reasons that transcend career goals: they develop thoughtful, ethical, and able citizens who have a range of habits to navigate an increasingly complex, global, and technological world.

Two key characteristics are embedded in signature pedagogies: intentionality and authenticity. They are imbued with a deliberate disciplinary design. Calder's revised survey course, like Shulman's sample law classroom, originates with the goal of "socialization into" the entirety of a field with its ways of knowing, doing, and being. They are more than the visible teaching and learning practices, or what Shulman calls the "surface structure" of signature pedagogies. They are also built on the "deep structure" of understanding how the discipline is best taught and learned, and the "implicit structure" of the discipline's fundamental values.[11] Several studies have shown that, even more than the practices deployed in the classroom, the way an instructor conceives of the purpose of teaching affects student learning. A more conceptual approach to teaching aimed at, for instance, "provok[ing] discussion and debate, monitor[ing] students' changing understanding, and encourag[ing] students to question their own ideas," rather than a more transactional approach aimed at demonstrating

"good presentation, covering the content, and providing a good set of notes," leads to deeper student learning.[12] Extrapolating from this work, pedagogical intention matters.

Signature pedagogies are also characterized by authenticity. Far more than the notion of learning by doing, or mimicking a field's "surface structures," signature pedagogies reproduce the experience of doing and being in the field, combining "a cognitive apprenticeship wherein one learns to think like a professional, a practical apprenticeship where one learns to perform like a professional, and a moral apprenticeship where one learns to think and act in a responsible and ethical manner that integrates across all three domains."[13]

Outside of the classical professions cited by Shulman—law, medicine, engineering, the clergy—practitioner-scholars are working to identify and articulate signature pedagogies across the disciplines.[14] Some are aided by their professional organizations' statements about the learning expectations or competencies for the field. For instance, Peden and Wilson VanVoorhis look to the American Psychological Association's (APA) *Guidelines* for the undergraduate psychology major. Using the relevant goals from the APA, they turn to the discipline's top teaching journal to "discover what these articles reveal about whether psychologists weigh the goals equally and how psychologists teach undergraduates to think and act like psychologists."[15] By mapping the goals onto the pedagogies discussed in the articles, they offer evidence of the most frequent pedagogies, and then encourage follow-up research to consider the broader implications for what students are learning about the field.

Information Literacy and Signature Pedagogies

This method offers another way of looking at the Association of College and Research Libraries (ACRL) *Framework for Information Literacy in Higher Education*.[16] If information literacy is foundational to "thinking like a librarian"—akin to the sociological imagination for sociologists or historical thinking for historians[17]—the ACRL's six frames and prompts point to some elements of librarians' signature pedagogies. While in some sense they reflect what it means to think like a librarian, the outward-facing work of librarians (as illustrated in information literacy) means that the goal is again not necessarily more librarians but instead more information-literate learners. The frames and prompts also map onto Shulman's three apprenticeships, spanning the head, hand, and heart as habits for information-literate citizens.

For the head, the *Framework* offers two keys way of knowing: understanding "authority" as "constructed and contextual" and "scholarship as conversation." It suggests that this cognitive apprenticeship occurs when students have "an open mind when encountering varied and sometimes conflicting perspectives" or when they "see themselves as contributors to scholarship rather than only consumers." These illustrative prompts for each frame can be seen as elements of the surface structure of this signature pedagogy.

For the hand, three frames highlight ways of doing formed in a practical apprenticeship: treating "information creation as a process," "research as inquiry," and "searching as strategic exploration." Here, students experience the "different methods of information dissemination with different purposes," the "open-ended exploration and engagement with information," and the limits of "first attempts at searching."

And one frame—one significant frame—outlines the moral apprenticeship, or a habit of the heart: "information has value." The power of information and its role "as a

commodity, as a means of education, as a means to influence, and as a means of negotiating and understanding the world" is arguably the foundational belief in information literacy and librarianship. The prompts for learning point to "proper attribution and citation" as surface ways of demonstrating "respect" for "the original ideas of others." Here, the notion of surface structure is even more meaningful: while attribution and citation are essential, they are indeed small actions that convey deep moral value in the field.

The ACRL *Framework* is just one way in to signature pedagogies for librarians. Reflecting more broadly on additional habits of head, hand, and heart that are important to librarians will generate a range of approaches and strategies that are signatures of library instruction. In collaboration with library colleagues, this reflection can extend to exploring where and how these ways of knowing, doing, and valuing are taught. Such critical examination of what this apprenticeship looks like can then explore perhaps the most important question of all: Is it effective? This is where the Scholarship of Teaching and Learning (SoTL) comes in.

Scholarship of Teaching and Learning

SoTL is a way to assess, document, and communicate students' learning. More specifically, it is

- **inquiry** to understand or improve postsecondary student learning and the teaching approaches and practices that affect student learning
- **informed** by relevant research on teaching and learning
- conducted by members of the educational community *from across campus* who draw from their **disciplinary expertise** by gathering and analyzing relevant **evidence** from the learners in their own specific **contexts shared broadly** to contribute to knowledge and practices in teaching and learning.[18]

One of the strengths of SoTL is that its practice isn't limited to any discipline or rank or status. Librarians, their instructor-of-record colleagues, and the learners themselves can conduct SoTL projects to meaningfully study the learning that happens in their specific teaching and learning contexts.

Mia O'Brien's "Navigating the SoTL Landscape: A Compass, Map, and Some Tools for Getting Started" has gained traction in the library community as a useful resource for getting started in SoTL.[19] She offers four questions as orientations to the field: "What will my students learn and why is it worth learning? Who are my students and how do students learn effectively? What can I do to support students to learn effectively? How do I know if my teaching and my students' learning have been effective?"[20] Foregrounding pedagogical intention, or "teaching as design," she also includes signature pedagogies as one way "to support students to learn effectively."

O'Brien's recommendations for sources of evidence collected to answer "How do I know if my teaching and my students' learning have been effective?" are student evaluation surveys, peer evaluation through "focused observation of practice, analysis of learning materials, feedback of assessment designs etc.," and self-evaluation in course memos, teaching journals, records of conversations, and statements of teaching philosophy.[21] She ends by mentioning Angelo and Cross's *Classroom Assessment Techniques* as "a particularly

comprehensive, highly regarded resource and starting point." Indeed, *CATs*, as it's widely known, includes even stronger methods for collecting evidence of student learning. *CATs'* formative assessments, or low-stakes methods for quickly capturing snapshots of student thinking, are simple to implement and meaningful in what they can reveal about learning or problems with learning.

Perhaps the best known of the classroom assessment techniques are the minute paper and the muddiest point. The minute paper can be used to get a glimpse of what students think they understand about something. It's a brief, typically anonymous, and ungraded response to a question such as "What's the most important thing you learned today?"[22] Students' responses to this question can be revealing: they may articulate something close to the intended learning goal, or they may reflect misconceptions and misunderstandings, or they may identify something important that's still different from the intended outcome. Whatever the answer, it can make visible student thinking at a critical point in learning. Timed strategically, these documents can then become data or evidence of something significant about student learning.

The muddiest point is a similarly brief, anonymous, ungraded assessment technique that can provide useful insight, as well as SoTL evidence or data, particularly into moments of confusion or frustration. In response to a question such as "What is confusing about today's class?" or "What questions do you have about today's activity?" students can safely confess what's difficult for them or what they don't understand.[23] Imagine having on hand paragraphs in which students describe what research means to them. A SoTL perspective resists taking these statements at face value because "when we examine student learning,… nothing is as obvious as it might seem."[24] Looking at students' responses with this complexity in mind, these descriptions may provide specific examples of, for instance, students seeing scholarship as a conversation, but a conversation that actively excludes them. They may provide clear and varied descriptions of "information" as inert, depersonalized, and deconceptualized data, suggesting one of the reasons why they may see citations, attribution, and plagiarism as mere technicalities. There are other effective classroom assessment techniques that can function as data collection tools in SoTL projects. A simple Google search will turn up dozens.

Think-alouds are another rich source of SoTL evidence. While classroom assessment techniques like the minute paper and muddiest point are easy to implement and relatively quick to analyze, think-alouds are more time-intensive, but the level of access into student thinking they provide is invaluable. A protocol originating in cognitive psychology, the think-aloud trains someone "to think out loud while completing a task," and "the voiced introspections can be recorded, transcribed, and analyzed to determine what cognitive processes were in play."[25] Calder explains,

> For SoTL researchers, think-alouds can generate useful data for several kinds of questions. For example, when observing a recurring bottleneck to learning, how does one identify the specific places where students get stuck? Or what about a teaching intervention or new course design: How effective for learning is the new approach, and what new moments of difficulty are created? A beautiful thing about think-alouds is how effective they are at uncovering

and documenting what conventional assessment methods often miss—hidden levels of student insight and misunderstanding.[26]

Imagine a handful of students doing think-alouds while conducting their searches, verbalizing where they get stuck, how they feel about that stuckness, what they think when they find something useful, what they consider useful, and so on. Or think of what we could learn by having access to what students think about (and don't think about) when they're integrating researched information into a paragraph within their own essays.

SoTL and Signature Pedagogies

The ACRL *Framework* calls for "faculty" to "look to librarians as partners" and encourages "collaboration" and "a new synergy" with "their complementary roles as educators." This call invokes the model of the embedded librarian working alongside an instructor of record in the design and delivery of a course, rather than the traditional one-off, fifty-minute class period in which the librarian is expected to teach students how to do research, be information literate, and complete an assignment—typically a weighty one—specific to the course. It also invokes the partnership, collaboration, and complementary lens librarians can offer from their unique access to students. The one-on-one or small-group instruction that occurs when librarians work directly with students in consultations, at the reference desk, or even in online chats is a pedagogy that deserves attention. In these conversations, librarians have access to student thinking that may not be shared elsewhere. In these moments away from their instructor of record and their peers, students are more likely to confess to confusion, describe what they understand and what they don't, ask vulnerable questions, and reveal misconceptions—some of the most important information about student learning. This pedagogy puts librarians in a unique position to make these intermediate moments of learning visible and to make sense of what happens as students struggle to learn outside of class. These insights can then be shared with instructors as part of the same teaching and learning community working in collaboration, partnership, and a more integrative approach to support the same students.

Is it possible that these moments of instruction are a signature pedagogy of library instruction? What ways of thinking are the students developing in these moments? What habits and practices are they honing? What values are they exercising? Perhaps they are learning to think of authority as dependent on their "information need" and context, and of their research as a conversation. Perhaps they are honing the processes of creating information, the ability to ask "increasingly complex or new questions" as they go, and "the mental flexibility" of strategic searching. And perhaps they are exercising greater respect for the value of information and ideas. We can speculate, but SoTL projects would provide evidence and understanding.

Pat Hutchings's now-classic taxonomy of SoTL questions offers an accessible entry point for thinking about SoTL projects.[27] She outlines four kinds of questions SoTL projects may ask and attempt to answer: "What works?" projects evaluate the effectiveness of a learning activity, "What is?" projects document and describe moments of learning, "What's possible?" projects experiment with new approaches, and "theory-building" projects conceptualize about what it means to teach and learn.[28] The first two project types are

the most common. They also establish foundations for understanding effective teaching and learning, especially if in reverse order: that is, starting with a "What is?" project that aims to describe, document, and understand what happens when students are in the midst of learning before trying to determine if something "works." Projects that start with evaluating an intervention without first establishing what isn't working by drawing on either a prior project or a strong literature review may, in fact, begin with an inaccurate diagnosis that then leads to efforts to fix what wasn't broken. Rather than the cart leading the horse—and potentially the wrong horse—SoTL practitioners are wise to begin with a thoughtful exploration of "What is?"

- What do students understand about *x*? What does it look like to understand it?
- What do students *not* understand about it? What are their misconceptions, bottle-necks, mental roadblocks about it? What do these difficulties look like?
- Why do they have difficulty with it? What's at the root of their misconceptions?
- What are the consequences of their misconceptions?

Ultimately, the Scholarship of Teaching and Learning and signature pedagogies present an invitation to librarians to delve deeply into student learning within their specific contexts and to draw out the internal processes that other educators can't access on their own—and then to share these insights with others in conversations and communities based on the shared meaning and purpose of improving learning across and beyond institutions of higher education.

Notes

1. Lee S. Shulman, "Teaching as Community Property: Putting an End to Pedagogical Solitude," *Change* 25, no. 6 (1993): 6.
2. Association of American Colleges and Universities, "Essential Learning Outcomes," accessed May 1, 2018, https://aacu.org/leap/essential-learning-outcomes.
3. Nancy L. Chick, Aeron Haynie, and Regan A. R. Gurung, "From Generic to Signature Pedagogies: Teaching Disciplinary Understandings," in *Exploring Signature Pedagogies: Approaches to Teaching Disciplinary Habits of Mind*, ed. Regan A. R. Gurung, Nancy L. Chick, and Aeron Haynie (Sterling, VA: Stylus, 2009), 12–13.
4. Mary Taylor Huber and Sherwyn P. Morreale, "Situating the Scholarship of Teaching and Learning: A Cross-Disciplinary Conversation," in *Disciplinary Styles in the Scholarship of Teaching and Learning: Exploring Common Ground*, ed. Mary Taylor Huber and Sherwyn P. Morreale (Menlo Park, CA: Carnegie Foundation, 2002), 19.
5. Lee S. Shulman, "Signature Pedagogies in the Professions," *Daedalus* 134, no. 3 (2005): 52.
6. Shulman, "Signature Pedagogies in the Professions," 59.
7. Lendol Calder, "Uncoverage: Toward a Signature Pedagogy for the History Survey," *Journal of American History* 92, no. 4 (2006): 1359.
8. Calder, "Uncoverage," 1363.
9. Calder, "Uncoverage," 1361.
10. Calder, "Uncoverage," 1361.
11. Shulman, "Signature Pedagogies in the Professions," 54–55.
12. Keith Trigwell, "Evidence of the Impact of the Scholarship of Teaching and Learning Purposes," *Teaching & Learning Inquiry* 1, no. 1 (2013): 98. See also Keith Trigwell, Michael Prosser, and Fiona Waterhouse, "Relations between Teachers' Approaches to Teaching and Students' Approaches to Learning," *Higher Education* 37 (1999): 57–70; Graham Gibbs and Martin Coffey, "The Impact of Training

of University Teachers on Their Teaching Skills, Their Approach to Teaching and the Approach to Learning of Their Students," *Active Learning in Higher Education* 5, no. 1 (2004): 87–100.

13. Lee S. Shulman, "The Signature Pedagogies of the Professions of Law, Medicine, Engineering, and the Clergy: Potential Lessons for the Education of Teachers" (presentation at the National Research Council's Center for Education's Math Science Partnerships Workshop: Irvine, CA, February 6–8, 2005), 3, http://iw73535.tripod.com/sitebuildercontent/sitebuilderfiles/shulmanarticle.pdf.

14. See, for example, Regan A. R. Gurung, Nancy L. Chick, and Aeron Haynie, eds., *Exploring Signature Pedagogies* (Sterling, VA: Stylus, 2009); Nancy L. Chick, Regan A. R. Gurung, and Aeron Haynie, eds., *Exploring More Signature Pedagogies* (Sterling, VA: Stylus, 2012).

15. Blaine F. Peden and Carmen R. Wilson VanVoorhis, "Developing Habits of the Mind, Hand, and Heart in Psychology Undergraduates," in *Exploring Signature Pedagogies: Approaches to Teaching Disciplinary Habits of Mind*, ed. Regan A. R. Gurung, Nancy L. Chick, and Aeron Haynie (Sterling, VA: Stylus, 2009), 165.

16. Association of College and Research Libraries, *Framework for Information Literacy for Higher Education* (Chicago: Association of College and Research Libraries, 2016), http://www.ala.org/acrl/standards/ilframework.

17. Eri Fujieda, "Signature Pedagogy and the Sociological Imagination: A Critical Assessment," in *Exploring Signature Pedagogies: Approaches to Teaching Disciplinary Habits of Mind*, ed. Regan A. R. Gurung, Nancy L. Chick, and Aeron Haynie (Sterling, VA: Stylus, 2009), 184; Sam Wineburg, *Historical Thinking and Other Unnatural Acts* (Philadelphia: Temple University Press, 2001); Calder, "Uncoverage"; Joel M. Sipress and David J. Voelker, "From Learning History to Doing History: Beyond the Coverage Model," in *Exploring Signature Pedagogies: Approaches to Teaching Disciplinary Habits of Mind*, ed. Regan A. R. Gurung, Nancy L. Chick, and Aeron Haynie (Sterling, VA: Stylus, 2009), 21.

18. Nancy Chick, "A Scholarly Approach to Teaching," in "[The SoTL Guide]," accessed May 1, 2018, https://nancychick.wordpress.com/understanding-sotl/a-scholarly-approach-to-teaching/.

19. Mia O'Brien, "Navigating the SoTL Landscape: A Compass, Map, and Some Tools for Getting Started," *International Journal for the Scholarship of Teaching and Learning* 2, no. 2 (2008): 1–20. See, for instance, Lauren Hays and Melissa Mallon, "Keeping Up With… the Scholarship of Teaching and Learning," *Keeping Up With*, September 19, 2017, http://www.ala.org/acrl/publications/keeping_up_with/sotl.; Lindsay McNiff and Lauren Hays, "SoTL in the LIS Classroom: Helping Future Academic Librarians Become More Engaged Teachers," *Communications in Information Literacy* 11, no. 2 (2017): 366–77.

20. O'Brien, "Navigating the SoTL Landscape," 4.

21. O'Brien, "Navigating the SoTL Landscape," 14–15.

22. Thomas A. Angelo and K. Patricia Cross, *Classroom Assessment Techniques* (San Francisco: Jossey-Bass, 1993), 148–53.

23. Angelo and Cross, *Classroom Assessment Techniques*, 154–158.

24. Dianne Fallon, "'Lucky to Live in Maine': Examining Student Responses to Diversity Issues," *Teaching English in the Two-Year College* 33, no. 4 (May 2006): 413.

25. Lendol Calder, "Student Think-Alouds: Making Thinking and Learning Visible," in *SoTL in Action: Illuminating Critical Moments of Practice*, ed. Nancy L. Chick (Sterling, VA: Stylus, 2018), 110.

26. Calder, "Student Think-Alouds," 110–11.

27. Pat Hutchings, "Introduction," in *Opening Lines: Approaches to the Scholarship of Teaching and Learning*, ed. Pat Hutchings (San Francisco: Jossey-Bass, 2000), 1–10.

28. Hutchings, "Introduction," 4–5.

Bibliography

American Psychological Association. *APA Guidelines for the Undergraduate Psychology Major.* Washington, DC: American Psychological Association, 2007. http://www.apa.org/ed/precollege/about/psymajor-guidelines.pdf (page discontinued).

Angelo, Thomas A., and K. Patricia Cross. *Classroom Assessment Techniques: A Handbook for College Teachers.* San Francisco: Jossey-Bass, 1993.

Association of American Colleges and Universities. "Essential Learning Outcomes." Accessed May 1, 2018. https://aacu.org/leap/essential-learning-outcomes.

Association of College and Research Libraries. *Framework for Information Literacy for Higher Education*. Chicago: Association of College and Research Libraries, 2016. http://www.ala.org/acrl/standards/ilframework.

Calder, Lendol. "Student Think-Alouds: Making Thinking and Learning Visible." In *SoTL in Action: Illuminating Critical Moments of Practice*. Edited by Nancy L. Chick, 109–16. Sterling, VA: Stylus, 2018.

———. "Uncoverage: Toward a Signature Pedagogy for the History Survey." *Journal of American History* 92, no. 4 (2006): 1358–70.

Chick, Nancy. "[The SoTL Guide]." Accessed May 1, 2018. https://nancychick.wordpress.com/sotl-guide/.

Chick, Nancy L., Regan A. R. Gurung, and Aeron Haynie, eds. *Exploring More Signature Pedagogies: Approaches to Teaching Disciplinary Habits of Mind*. Sterling, VA: Stylus, 2012.

Chick, Nancy L., Aeron Haynie, and Regan A. R. Gurung. "From Generic to Signature Pedagogies: Teaching Disciplinary Understandings." In *Exploring Signature Pedagogies: Approaches to Teaching Disciplinary Habits of Mind*. Edited by Regan A. R. Gurung, Nancy L. Chick, and Aeron Haynie, 1–16. Sterling, VA: Stylus, 2009.

Fallon, Dianne. "'Lucky to Live in Maine': Examining Student Responses to Diversity Issues." *Teaching English in the Two-Year College* 33, no. 4 (May 2006): 410–20.

Fujieda, Eri. "Signature Pedagogy and the Sociological Imagination: A Critical Assessment." In *Exploring Signature Pedagogies: Approaches to Teaching Disciplinary Habits of Mind*. Edited by Regan A. R. Gurung, Nancy L. Chick, and Aeron Haynie, 183–204. Sterling, VA: Stylus, 2009.

Gibbs, Graham, and Martin Coffey. "The Impact of Training of University Teachers on Their Teaching Skills, Their Approach to Teaching and the Approach to Learning of Their Students." *Active Learning in Higher Education* 5, no. 1 (2004): 87–100.

Gurung, Regan A. R., Nancy L. Chick, and Aeron Haynie, eds. *Exploring Signature Pedagogies: Approaches to Teaching Disciplinary Habits of Mind*. Sterling, VA: Stylus, 2009.

Hays, Lauren, and Melissa Mallon. "Keeping Up With… the Scholarship of Teaching and Learning." *Keeping Up With*, September 19, 2017, http://www.ala.org/acrl/publications/keeping_up_with/sotl.

Huber, Mary Taylor, and Sherwyn P. Morreale, eds. *Disciplinary Styles in the Scholarship of Teaching and Learning: Exploring Common Ground*. Menlo Park, CA: Carnegie Foundation, 2002.

Hutchings, Pat. "Introduction." In *Opening Lines: Approaches to the Scholarship of Teaching and Learning*. Edited by Pat Hutchings, 1–10. San Francisco: Jossey-Bass, 2000.

McNiff, Lindsay, and Lauren Hays. "SoTL in the LIS Classroom: Helping Future Academic Librarians Become More Engaged Teachers." *Communications in Information Literacy* 11, no. 2 (2017): 366–77.

O'Brien, Mia. "Navigating the SoTL Landscape: A Compass, Map, and Some Tools for Getting Started." *International Journal for the Scholarship of Teaching and Learning* 2, no. 2 (2008): 1–20.

Peden, Blaine F., and Carmen R. Wilson VanVoorhis. "Developing Habits of the Mind, Hand, and Heart in Psychology Undergraduates." In *Exploring Signature Pedagogies: Approaches to Teaching Disciplinary Habits of Mind*. Edited by Regan A. R. Gurung, Nancy L. Chick, and Aeron Haynie, 161–82. Sterling, VA: Stylus, 2009.

Shulman, Lee S. "Signature Pedagogies in the Professions." *Daedalus* 134, no. 3 (2005): 52–59.

———. "The Signature Pedagogies of the Professions of Law, Medicine, Engineering, and the Clergy: Potential Lessons for the Education of Teachers." Presentation at the National Research Council's Center for Education's Math Science Partnerships Workshop: Irvine, CA, February 6–8, 2005. http://iw73535.tripod.com/sitebuildercontent/sitebuilderfiles/shulmanarticle.pdf.

———. "Teaching as Community Property: Putting an End to Pedagogical Solitude." *Change* 25, no. 6 (1993): 6–7.

Sipress, Joel M., and David J. Voelker. "From Learning History to Doing History: Beyond the Coverage Model." In *Exploring Signature Pedagogies: Approaches to Teaching Disciplinary Habits of Mind*. Edited by Regan A. R. Gurung, Nancy L. Chick, and Aeron Haynie, 19–35. Sterling, VA: Stylus, 2009.

Trigwell, Keith. "Evidence of the Impact of the Scholarship of Teaching and Learning Purposes." *Teaching & Learning Inquiry* 1, no. 1 (2013): 95–105.

Trigwell, Keith, Michael Prosser, and Fiona Waterhouse. "Relations between Teachers' Approaches to Teaching and Students' Approaches to Learning." *Higher Education* 37 (1999): 57–70.

Wineburg, Sam. *Historical Thinking and Other Unnatural Acts: Charting the Future of Teaching the Past*. Philadelphia: Temple University Press, 2001.