What is the Scholarship of Teaching and Learning?

Mary Huber, Ph.D.

Mary Huber is Senior Scholar Emerita and Consulting Scholar at The Carnegie Foundation for the Advancement of Teaching. Involved in research at the Carnegie Foundation since 1985, Huber has directed projects on Cultures of Teaching in Higher Education; led Carnegie’s roles in the Integrative Learning Project and the U.S. Professors of the Year Award; and worked closely with the Carnegie Academy for the Scholarship of Teaching and Learning (CASTL). She speaks, consults, and writes on the scholarship of teaching and learning, integrative learning, and faculty roles and rewards.

What is the Scholarship of Teaching and Learning?

“...to improve as teachers, faculty need reliable information about how well students are learning in their classes. They also benefit from opportunities to collaborate and to learn from professional colleagues” (The Study of Undergraduate Education at Stanford University, 2012, p. 86).

“Ultimately, investigative work into teaching and learning will not be an intriguing aside, or add-on, but an essential facet of good teaching—built into the expected repertoire of scholarly practice” (Shulman, 2000, p. 105).

The scholarship of teaching and learning (SoTL) is an approach to college and university teaching that views classrooms (and other learning spaces) as sites for inquiry, innovation, and knowledge-building.

SoTL engages educators in looking closely and critically at their students’ learning for the purpose of improving their own courses and programs. But it also involves going public with insights, experiences and results that colleagues can evaluate and build on.

Scholars of teaching and learning advance the profession of teaching in higher education by drawing from and contributing to wider pedagogical conversations in and across institutions and fields.

Why Engage in SoTL?

This is an extraordinary time for teaching and learning in higher education. On the one hand, there’s been bad news about “limited learning” in college from the large longitudinal studies conducted by Richard Arum and Josipa Roksa (2011) and by the Wabash National Study of Liberal Arts Education (Pascarella, Blaich, Marin, and
Hanson, 2011). On the other hand, there has been excitement generated by new approaches to creating more engaging learning environments for students. New developments in technology have gained attention most recently, but other pedagogies and programs encouraging more active and collaborative learning have also invited experimentation and show promise (see Kuh, Kinzie, Schuh, and White, 2005).

Attention to undergraduate education has grown in virtually every discipline as well as among those concerned with crosscutting liberal learning goals. And, while there are differences within and among these communities, there’s a shared sense that the innovation required to make the best use of new pedagogies should be based on deep understanding of, and evidence about, student learning. These new interests in teaching practices and their relation to student learning have led to efforts to make lessons from the learning sciences more accessible, to studies that formally evaluate various teaching techniques, and to robust and rigorous practitioner inquiry--often called “the scholarship of teaching and learning” or “SoTL.”

**History**

Introduced into the vocabulary of higher education as “the scholarship of teaching,” in *Scholarship Reconsidered* by Ernest L. Boyer (1990), the idea gained attention for giving college and university teaching a place within a broader vision of scholarship that also included the discovery, integration, and application of knowledge.

In later years, under the guidance of Stanford Professor Emeritus, Lee Shulman, who succeeded Boyer as President of the Carnegie Foundation for the Advancement of Teaching, the work became more widely known as “the scholarship of teaching and learning” (See Shulman, 2004, 2011).

Since then, the term has been widely adopted in higher education both in the US and internationally (at least in Anglophone countries) to refer to an inquiry-driven approach to teaching in which educators look carefully and critically at their students’ learning, use the results to improve their teaching, and share what they have found with their colleagues in their institutions and fields.

SoTL has become a valuable addition to the wider “teaching commons,” defined as “an emergent conceptual space for exchange and community among faculty, students, and all others committed to learning as an essential activity of life in contemporary democratic society” (Huber and Hutchings, 2005, p.1). This larger commons includes as well the work of researchers in education and the learning sciences, scholars engaged in discipline-based education research (National Research Council, 2012), professional development staff, and public policy experts, to name a few.

SoTL brings the experience of students and faculty into this larger conversation, giving practitioners a seat at the table and enabling them to speak with a voice that can be heard (Huber and Hutchings, 2005; Hutchings, Huber, and Ciccone, 2011).
Doing SoTL

Doing SoTL typically involves asking questions about one’s own students’ learning; gathering and analyzing evidence to help answer those questions; trying out and exploring new insights about learning in one’s teaching; and making what one has found public, so that it can be reviewed, critiqued, and built on by one’s peers.

Most commonly pursued in the classroom, the scholarship of teaching and learning can also be used in collaborative inquiry leading to the design, assessment, and improvement of academic programs. (See Huber and Hutchings, 2005; Hutchings, Huber, and Ciccone, 2011).

Asking Questions

SoTL questions typically probe a concern one has had about teaching or an aspect of students learning one is puzzled by, worried about, or wish one understood more deeply. These questions can be roughly categorized according to a typology derived from Hutchings (2000).

- What works? Is more interaction in my lecture class helping at-risk students learn chemistry? Is service learning promoting my students’ sense of engagement with science?

- What is going on? What are my students thinking? What prior understandings (or misunderstandings) are students bringing to the task? How are they approaching study for the course?

- What’s possible? How might I help students understand the difficulty they encounter in reading a poem as a means rather than a barrier to understanding? (See Salvatori and Donahue, 2004)

- What theory, framework, or model would be useful in understanding a particular pedagogical issue? What do students actually need to do to be able to succeed in a course in my field? How does an expert do these things? How can these tasks be explicitly modeled? (See Pace and Middendorf, 2004).

Clearly, these kinds of questions can be asked at either the individual course or at the program level. It is worth pointing out that when they address learning goals formulated at the departmental or program level, they also have the potential to contribute to assessment in important ways.
Gathering and Analyzing Evidence

SoTL questions are sometimes answered through close and careful reading of student work produced for a course (see Linkon, 2011). But often the answers require additional windows onto students’ thinking and activity. Scholars of teaching and learning often start with methods that are familiar to them from within their own disciplinary repertoires. Sometimes, to answer particular questions, they use other, less familiar, methods as well.

 Needless to say, there are sensitivities about questions of method and rigor within the larger SoTL community. At the same time there is a growing repertoire of shared techniques to draw from: pre- and post-questionnaires, close reading of samples of student work, “think-alouds,” focus groups, surveys, and the like.

Many scholars of teaching and learning have found it helpful to engage graduate students and undergraduates as co-inquirers in SoTL studies (See Werder and Otis, 2010).

It is important to think through the ethical issues involved in the kind of SoTL inquiry you wish to undertake (See Hutchings, 2002). Institutional Review Board approval may also be necessary for certain kinds of SoTL research.

Exploring New Insights

One purpose of SoTL inquiry is to improve teaching and learning in one’s classroom or program. This typically involves trying out and refining new insights through the design or redesign of a course, lesson, assignment, or assessment. Sometimes it’s more a matter of identifying new goals for learning, seeking ways of teaching them, and assessing the extent of their success. The process often feeds into a new cycle of inquiry, evidence-gathering, and innovation.

The SoTL process is flexible enough to accommodate modest levels of engagement, for example, reflection on existing evidence (such as student papers or exams) that lead to small changes whose effectiveness in improving student performance can be tracked. At its most elaborate, however, SoTL can develop into a larger agenda for inquiry and action through multiple iterations of a course or set of courses. (See, for example, Indiana University’s History Learning Project.)

Going Public

In SoTL, as with other kinds of research, “going public” can mean many things. There are often opportunities to present on panels or posters at campus forums or at disciplinary and professional society meetings. Sometimes scholars prepare articles for newsletters or material for websites, while more polished work can be published in the
A Big Tent View of SoTL

The SoTL community is diverse, with some participants focusing on the research side of the work and its contributions to knowledge about students and their learning, while others attend more to the teaching side and how inquiry into learning can feed back into the redesign of courses and programs (See, for example, Bernstein and Bass, 2005). A “big tent” view embraces both emphases, while also recognizing that some participants might want to get involved only occasionally or in small ways to solve a particular problem of practice, while for others engagement will eventually lead to a larger, more ambitious, body of work.

From the “big tent” perspective, then, SoTL is not just for the small number of faculty who may aspire to developing a new area of scholarly expertise, but also for that wider group with serious interests in pedagogical and curricular reform and innovation.

SoTL at Stanford

The deliberations leading to the publication of the SUES report (2011) have raised interest in pedagogical and curricular matters across the Stanford campus. The formation of a scholarship of teaching and learning community at Stanford could help maintain that momentum and provide a way for outstanding faculty to build expertise and contribute to thought and practice around undergraduate education at Stanford and beyond. In building this community, Stanford has many strengths to draw on.

A Strong Foundation

Stanford has a strong foundation for building a scholarship of teaching and learning community. For starters, Stanford is home to faculty and staff who are well-known for their contributions to research on education issues. Others have examined pedagogy and curriculum in the context of research in their own disciplines, or from the vantage point of their own teaching and administrative roles. Some, too, have written well-regarded texts or created tools and platforms for use by other teachers.
Beyond (and certainly including) those who have become externally well known, are many faculty who have strong interests in teaching and curriculum development. They are joined by graduate students, postdocs, staff (and, yes, undergraduates) who care deeply about pedagogical issues.

The scholarship of teaching and learning adds another level of engagement to the rich set of activities already available on campus, encouraging and supporting more systematic inquiry into learning that can better inform teaching improvement and innovation, provide more detailed information about learning outcomes at both a course and program level, inform discussion and debate about education at Stanford, and contribute to knowledge about teaching and learning in the disciplines and professions.

Pedagogical researchers: Stanford is home to many faculty and staff who are already well known for their contributions on teaching and learning at the college and university level. These include people for whom pedagogical issues have become a major focus of research: for example, Sam Weinberg (historical thinking), Carol Dweck (mindsets and motivation), Claude Steele (stereotype threat), Pam Grossman and Linda Darling-Hammond (teacher education), Roy Pea (technology and learning), Andrea Lunsford (undergraduate writing), and Sheri Sheppard (engineering education).

There is also a distinguished set of Stanford faculty who have examined pedagogy and curriculum in conjunction with other foci for disciplinary research. Michele Elam, for example, includes a chapter on “The Mis-education of Mixed Race” in her book The Souls of Mixed Folk: Race, Politics, and Aesthetics in the New Millennium (2011). Paula Moya, too, has a chapter on multicultural education in her book Learning from Experience: Minority Identities, Multicultural Struggles (2002).

Other contributions have come about primarily through their authors’ teaching and administrative roles, such as Jennifer Summitt, who has presented the English department’s curriculum redesign (and the research and thinking behind it) in several high-profile professional venues; Russell Berman, who has written (with former Stanford staff member Jenny Bergeron) on assessment and is leading a Modern Languages Association taskforce on graduate education. Scott Sagan has been recognized in his field for his ideas on how to teach nonproliferation.

Of course there are textbook authors among Stanford faculty, and others who have created tools for use by other faculty. Some contributions have been frankly entrepreneurial: the work of Andrew Ng, Daphne Koller, and Sebastian Thrun in developing platforms (and companies) for massive open online courses (MOOCs) has contributed to a major shift in the possibilities for online education and received much attention in the press.

Stanford is fortunate to have people in staff positions who have done influential work on university-level teaching and learning. In addition to the efforts of the professional staff at CTL, there are Helen Chen, an internationally recognized expert on e-portfolios and
Amy Collier, whose focus is online and physical learning spaces. Chris Golde has published important work on graduate education and Rick Reis, whose CTL-sponsored “Tomorrow’s Professor” Mailing List has hundreds (500+) of graduate student and faculty subscribers on campus and over 30,000 off-campus subscribers world-wide.

Graduate students, too, are involved. One large cross-disciplinary group is examining data from Stanford’s online courses in the “Lytics Laboratory,” operating under the auspices of the VPOL.

*Others with serious pedagogical interests*: Beyond (and certainly including) those who have become externally well known, are many faculty who have strong interests in teaching and curriculum development. They contribute thoughtfully to university-wide forums about undergraduate and graduate education (e.g., the contributors to the SUES report), participate in relevant departmental deliberations, and volunteer for a variety of opportunities to engage more intensively with students. Many have taken advantage of advice and programs available through the office of the Vice Provost for Undergraduate Education, for example, consulting with staff from the Center for Teaching and Learning or participating in the new Faculty College to work with colleagues to design new courses or programs.

The community of scholars with interests in teaching and learning also includes graduate students and postdocs---and certainly some undergraduates as well.

*Opportunities for SoTL at Stanford*

SoTL is available to anyone who wishes to engage more systematically in teaching and learning activities at Stanford. Getting started involves one or more of the following: asking a question and devising a way to answer it, documenting and reflecting on student learning in one’s course or program, tracking the effects of pedagogical or curricular innovation, and making lessons from that work public in appropriate forums.

Stanford offers many ways for faculty (and others with teaching responsibilities) to develop their knowledge and skills as teachers and to be recognized for pedagogical achievement. These opportunities, publicized on Stanford’s Teaching Commons site, can provide support and a community for those interested in developing as scholars of teaching and learning, as well.

For example, CTL offers lectures and workshops, presented to the community in the Award-Winning Teachers on Teaching series, teaching consultations, advice on the use of technology in teaching, and midterm assessment services. New programs, like VPUE’s Faculty College and VPOL’s grants for new course designs using technology, are attracting great interest and many talented applicants.

Stanford faculty who would like to share what they’ve learned from SoTL inquiry can explore outlets in a variety of discipline-specific or cross-disciplinary conferences and
journals (see “External Resources”). On campus, faculty are encouraged to submit short accounts of their work for publication on this “Teaching Commons” website. In addition, faculty are encouraged to share what they’ve found in departmental venues as a way of stimulating discussion on learning that matters in their disciplines and programs.

Links to External Resources

General Sites
International Society for the Scholarship of Teaching and Learning
http://www.issotl.org/
An overview of SoTL as an international field. The section on resources includes links to regional resources, descriptions of cross-disciplinary SoTL journals, major SoTL publishers, and links to sites with additional lists of publications.

Vanderbilt University’s SoTL website
http://cft.vanderbilt.edu/teaching-guides/reflecting/sotl/
A full introduction to SoTL that includes a discussion of “What is SoTL?,” “Examples of SoTL,” “How is SoTL Done?” (methods), “Going Public with SoTL” (journals, online, conferences), “Initiatives” (national, campus), and “Bibliography”

Bibliographies, Journals, Conferences
Kathleen McKinney, Illinois State
SoTL Bibliography: Selected Sources on the Field of SoTL
University, http://sotl.illinoisstate.edu/resLinks/selBibl.shtml

Illinois State University’s SoTL website
http://sotl.illinoisstate.edu/
Includes a list of SoTL conferences and institutes, External funding opportunities, Disciplinary association links, and links to various bibliographies, tutorials and the like.

Kennesaw State University’s Teaching Journals Directory
http://cetl.kennesaw.edu/teaching-journals-directory
A comprehensive list of journals on college/university teaching and related issues in higher education. Can be searched for discipline-specific journals.
**Methods and Tools**
Craig Nelson, Indiana University, Bloomington
“How Could I Do Scholarship of Teaching and Learning? Selected Examples of Several of the Different Genres of SoTL”
http://php.indiana.edu/~nelson1/SOTLGenres.html

Visible Knowledge Project, Georgetown University
https://blogs.commons.georgetown.edu/vkp/category/resources/sotl-kits/
This was a five-year multi-campus project focused on using technology to make learning more visible in ways that could inform pedagogical innovation and improvement. Site provides access to major publication of case studies and synthesis. In addition the site includes many useful resources, and is especially strong on tools and methods, including commentary on getting to researchable questions, coding data, and IRB. Look for other useful items under the “Categories” heading in the sidebar.

**Initiatives**
Center for the Integration of Research, Teaching, and Learning (CIRTL)
http://www.cirtl.net/
CIRTL is an NSF Center for Learning and Teaching in higher education. CIRTL uses graduate education as the leverage point to develop a national STEM faculty committed to implementing and advancing effective teaching practices for diverse student audiences as part of successful professional careers. They use the term “Teaching-as-Research” instead of “SoTL.”

History Learning Project, Indiana University, Bloomington
http://www.iub.edu/~hlp/
Documents the History Department’s initiative, beginning in 2006, 1) to define as thoroughly as possible the basic operations that are required for success in undergraduate history courses, 2) to develop ways of teaching these operations to undergraduates and to assess the extent to which these approaches actually succeeded in increasing students’ mastery of these skills, 3) To use the insights derived from this process to reshape the curriculum and the teaching strategies in our department, 4) To make these insights available to other historians and to secondary students preparing students for college courses.

Carnegie Academy for the Scholarship of Teaching and Learning (CASTL)
http://www.carnegiefoundation.org/scholarship-teaching-learning
CASTL represented a major initiative of the Carnegie Foundation for the Advancement of Teaching from 1998 to 2009. The CASTL Program sought to support the development of a scholarship of teaching and learning that: fosters significant, long-lasting learning for all students; enhances the practice and profession of teaching, and; brings to faculty members' work as teachers the recognition and reward afforded to other forms of
scholarly work. The site contains information about participants and has a useful section on resources.

Visible Knowledge Project, Georgetown University
https://blogs.commons.georgetown.edu/vkp/
This was a five-year multi-campus project focused on using technology to make learning more visible in ways that could inform pedagogical innovation and improvement. Site provides access to major publication of case studies and synthesis, and many other resources in under the Categories heading in the sidebar.

Examples
Gallery of Teaching and Learning: CASTL Higher Education Collection
http://gallery.carnegiefoundation.org/gallery_of_tl/castl_he.html
Course portfolios documenting SoTL inquiry from participants in the Carnegie Academy for the Scholarship of Teaching and Learning (a program of the Carnegie Foundation for the Advancement of Teaching, 1998-2009)

Peer Review of Teaching Project, University of Nebraska, Lincoln
http://www.courseportfolio.org/peer/pages/index.jsp?what=rootMenuD&rootMenuId=1
A repository for course portfolios submitted by faculty across the country. Dedicated to “making visible the intellectual work of teaching,” showcase examples include benchmark portfolios, focused on representing a snapshot or range of activities and learning from a course,” and inquiry portfolios, “focused on exploring a specific issue or question in a course.”

Portfolio Gallery: University of Kansas Center for Teaching Excellence
http://www.cte.ku.edu/gallery/
Electronic portfolios documenting projects that feature what KU faculty members and departments are doing in their classes and programs, as well as what their students are learning.

References Cited

Preview of first two chapters available at:
Available through Academe’s J-Stor site:

PDF available at:

PDF of first chapter available at:
http://www.carnegiefoundation.org/publications/advancement-learning-building-teaching-commons

PDF available at:


PDF of first chapter available at:

Indiana University’s History Learning Project. http://www.iub.edu/~hlp/


Summary available at History Learning Project site: [http://www.iub.edu/~hlp/](http://www.iub.edu/~hlp/)  


[http://academics.georgiasouthern.edu/ijisotl/v5n1/featured_essay/PDFs/_Shulman.pdf](http://academics.georgiasouthern.edu/ijisotl/v5n1/featured_essay/PDFs/_Shulman.pdf)
