Resources for Evidence and Student Learning

Overviews

Cross, K. P. & Steadman, M. H. (1996). *Classroom research: Implementing the scholarship of teaching*. San Francisco, CA: Jossey-Bass.

Dewar, J. & Bennett, C. (Eds.). (2015). *Doing the scholarship of teaching and learning in mathematics.* Washington, DC: Mathematical Association of America.

Sources for Ways/Approaches/Techniques for Gathering Evidence

Angelo, T. A., & Cross, K. P. (1993). *Classroom assessment techniques: A handbook for college teachers* (2nd ed.). San Francisco, CA: Jossey-Bass.

Barkley, E. F. (2009). *Student engagement techniques: A handbook for college faculty*. San Francisco, CA: Jossey-Bass.

Barkley, E.F. and Major, C.H.(2016). *Learning assessment techniques: A handbook for college faculty*. San Francisco, CA: Jossey-Bass.

Bean, J.C. (2011) *Engaging Ideas: The Professor's Guide to Integrating Writing, Critical Thinking, and Active Learning in the Classroom* (2nd ed.) San Francisco: Jossey-Bass

Bunce, D.M. & Cole. R.S. (Eds.) (2007). *Nuts and Bolts of Chemical Education Research*. New York, NY: Oxford University Press

Bunce, D.M. & Cole. R.S. (Eds.) (2015). *Tools of Chemistry Education Research*. New York, NY: Oxford University Press

Stevens, D.D. and Levi, A.J. (2012) *Introduction to Rubrics: An Assessment Tool to Save Grading Time, Convey Effective Feedback, and Promote Student Learning* (2nd ed.) Sterling: Stylus Publications

Walvoord, B.E. & Anderson, V.J. (2010). *Effective Grading: A Tool for Learning and Assessment in College* (2nd ed.). San Francisco: Jossey-Bass.

Qualitative Research

Merriam, S. B. (2009). Qualitative Research: A Guide to Design and Implementation. San Francisco: Jossey-Bass.

Otereo, V. K. & Harlow, D. B. "Getting Started in Qualitative Physics Education Research," in *Getting Started in PER*, edited by C. Henderson and K. A. Harper (American Association of Physics Teachers, College Park, MD, 2009), Reviews in PER Vol. 2, <http://www.per-central.org/document/ServeFile.cfm?ID=9122>.

(*Note from Matt* – This is a MUCH longer overview of qualitative methods than the Visible Knowledge Project web site listed in the next section of this resource sheet; if you are new to qualitative methods I would recommend starting with the Visible Knowledge Project coding kit.)

Web Based Resources

Overviews

International Society for the Scholarship of Teaching and Learning
http://www.issotl.com

The Taylor Institute for Teaching and Learning at the University of Calgary
http://sotl.ucalgaryblogs.ca/
This is a wonderful online guide to the scholarship of teaching and learning, written by Nancy Chick, University Chair in Teaching and Learning, Academic Director of the Taylor Institute, and one of the major leaders in the larger SoTL community. The section on evidence is well done.

Rubrics

VALUE Rubrics
http://www.aacu.org/value
VALUE (Valid Assessment of Learning in Undergraduate Education) is a campus-based assessment approach developed and lead by AAC&U as part of its Liberal Education and America's Promise (LEAP) initiative. VALUE rubrics provide needed tools to assess students' own authentic work, produced across students' diverse learning pathways, fields of study and institutions, to determine whether and how well students are meeting graduation level achievement in learning outcomes that both employers and faculty consider essential.
Teams of faculty and other educational professionals from institutions across the country—two- and four-year, private and public, research and liberal arts, large and small—developed rubrics for sixteen Essential Learning Outcomes that all students need for success in work, citizenship, and life.

ELIPSS
http://elipss.com/
Enhancing Learning by Improving Process Skills in STEM (ELIPSS) is an NSF-funded project that focuses on the identification, development, and assessment of process skills (also known as professional skills, lifelong learning skills, workplace skills, transferrable skills, or soft skills) in active learning, undergraduate STEM classrooms. Assessing process skill development and providing feedback to students and instructors is a key component for enhancing these skills in STEM programs.

Process skills are frequently cited as critical components of a successful education as well as a competent workforce. Many innovative pedagogical approaches involve creating active learning environments that engage students' process skills in addition to developing content knowledge. This project involves the development of resources to provide feedback to students and to inform

instructors as to the effectiveness of their instructional strategies in supporting process skill development across a broad range of active learning pedagogies across STEM disciplines.

Coding

Visible Knowledge Project
https://digitalcommons.georgetown.edu/blogs/vkp/
The Visible Knowledge Project (VKP) was a five-year project (2000-2005) aimed at improving the quality of college and university teaching through a focus on both student learning and faculty development in technology-enhanced environments. In all, more than seventy faculty from twenty-two institutions participated in the Visible Knowledge Project over five years. In addition to campus-based teams, a number of independent scholars participated from a half dozen other institutions. The project began in June 2000 and concluded in October 2005. Participants engaged in several methods for online collaboration to supplement annual institutes, including an adaptation of the digital poster-tool created by Knowledge Media Lab (Carnegie Foundation), asynchronous discussion, and web-conferencing.

This site contains a number of excellent resources, but particularly noteworthy is the overview of coding qualitative data that can be found at:
https://digitalcommons.georgetown.edu/blogs/vkp/2009/01/16/coding-data/