CHAPTER 3

Using the Scholarship of Teaching and Learning to Improve Learning Outcomes

REGAN A. R. GURUNG AND R. ERIC LANDRUM

The best place to start a story is the beginning, but when it comes to teaching and learning, we may want to start at the end. What do we want our students to know by the end of our classes? These goals are our learning outcomes (LOs) and are critical to effective pedagogical practices. What are LOs? How do we improve them using the scholarship of teaching and learning (SoTL)? These are central questions addressed in this chapter.

What Is SoTL?

SoTL is the intentional, systematic reflection on teaching and learning that results in peer-reviewed products made public (Gurung & Schwartz, 2010; see Irons & Buskist, 2008; Pan, 2009; Smith, in press; and Smith, 2008, for more on definitions).

Although SoTL is a relatively new field, thinking about how to improve teaching and learning is a centuries old activity (Berliner, 2006). Teachers have been reflecting on educational practices, both for formative improvement purposes and summative judgment purposes, for many years. Within U.S. psychology, this self-reflection on a discipline-wide basis was formalized in 1947 with the creation of Division 2 of the American Psychological Association (Buskist & Smith, 2008)—this division is now called the Society for Learning, Teaching, and Assessment.
for the Teaching of Psychology (STP). In the United Kingdom, the Higher Education Academy Psychology Network is one of the Higher Education Academy's 24 subject centers that supports teaching and learning at the discipline level and serves similar purposes to that of STP.

SoTL catapulted into the national higher education consciousness in 1990 with Ernest L. Boyer's (1990) _Scholarship Reconsidered_, which catalyzed extensive examination of research on teaching and learning. Boyer proposed adding the scholarship of teaching to the other more traditional recognized forms of scholarship such as scholarship of discovery. SoTL is now recognized by colleges, universities, and national and international organizations as a legitimate, and indeed, vibrant area of scholarly inquiry (O'Meara & Rice, 2005). More recently, academic institutions have taken on the mantle of SoTL leadership by starting up specialized journals such as the _International Journal for the Scholarship of Teaching and Learning (IJSOTL)_ , a peer-reviewed electronic journal published twice a year by the Center for Excellence in Teaching at Georgia Southern University, first published in January 2007 (http://academics.georgiasouthern.edu/ijsotl/index.htm).

Much has been written about the history of SoTL (e.g., Bender, 2005; Buskist & Smith, 2008), the prevalence of SoTL (e.g., Gurung, Ansburg, Alexander, Lawrence, & Johnson, 2008), and the potential benefit to faculty who engage in SoTL efforts (e.g., Goodburn & Savory, 2009; Russell, 2010; Smith, 2008; Weimer, 2006). Faculty-centered evidence about the beneficial effects of SoTL continue to emerge, such as the presentation of successful case studies based on particular institutions (Goodburn & Savory, 2009; Russell, 2010) and institution-wide survey efforts (Dewar, Dailey-Hebert, & Moore, 2010).

**SoTL Around the World**

Although SoTL was first championed in the United States, its practice is now common worldwide. For example, in the United Kingdom, Dai Hounsell and Noel Entwistle and others spearheaded the British Enhancing Teaching and Learning Project (ETL, n.d.), which developed subject-specific conceptual frameworks to guide institutional and faculty teaching-learning environments (see http://www.etl.tla.ed.ac.uk/publications.html). Based in Edinburgh, this group developed a number of useful tools for pedagogical research and mapped out key variables that influence learning (see Entwistle, 2009 for a review). One particularly useful tool that illustrates how SoTL can be used to increase learning is the _Approaches and Study Skills Inventory for Students (ASSIST; Tait & Entwistle, 1996)_ , a scale that has been used to explore student learning. For example, in Australia, the ASSIST survey was implemented at the beginning and end of a chiropractic class to identify changes in learning. When technology was integrated into the curriculum with appropriate
learning activities, students using virtual microscopes moved more toward a strategic approach to learning but expressed a preference for a deep approach to teaching (Jonas-Dwyer & Sudweeks, 2007).

There are many compelling examples of SoTL being conducted around the world and published in a variety of outlets. In a study conducted in Australia, Krisztina Valter and Gerlese Akerlind's (2010) learning objective was to get students to think and act like researchers. Students engaged in research-like activities during lectures and in groups. The article provides numerous examples of introducing students to research practices within a course setting. Although this case study is based in the natural sciences, the same approach to teaching research skills could easily translate into other disciplines and illustrates how SoTL can be used to better student learning.

A study conducted in Sweden addressed another common issue faced by many faculty—how does a teacher balance theory and practice? In a robotics course, Krister Wolff and Mattias Wahde's (2010) students used a custom-built robot consisting of standard electronic and mechanical components (instead of a commercial one) and modified time spent on teaching the theoretical background and time spent on robot assembly and programming to find what they considered a perfect balance of the two.

Global SoTL has evolved to a point where even cross-national data are available. For example, Susan Iverson and Amanda Espenschied-Reilly (2010) used interviews to study conceptions of academic service learning in the United States and the Republic of Ireland to determine if and how culture and social context shaped practitioners' perceptions and practices regarding service-learning pedagogy. The researchers found that "Irish participants distanced their practice from the historical and cultural context of U.S. service-learning, demonstrating the process of localization" (p. 1). The notion of culture and context is also seen in a study of memorization from Saudi Arabia. Muhammad Alfi (2004) reviewed research on memorization and educational theory, study of the Holy Qur'an, and methodologies in Islamic schools and used the amassed information to design classroom applications to optimize memorization.

SoTL is not always called by this name. A form of SoTL called action research in North America is called teacher research in the United Kingdom (Maclean & Mohr, 1999). Action research is any systematic inquiry conducted to gather information about how schools operate, how their faculty teach, and how well their students learn (Mills, 2007). In the United States, action research has its roots in the progressive education movement and the work of John Dewey (1916/2009). In the United Kingdom, teacher research fostered curricular reform and increased professionalism in teaching, and in Australia, action research catalyzed collaborative curriculum planning (Mills, 2007). Originating in the United Kingdom with the work of Lawrence Stenhouse (1975) and the Humanities Curriculum Project (McKernan, 1991), teacher research is now conducted around the globe.
Publishing SoTL Research

As a testament to the (mostly unknown) longevity of pedagogical research, the earliest journal articles on teaching and learning were published back in 1924 with the *Journal of Chemical Education*, which is still published. Many pedagogical journals started as newsletters (e.g., *Teaching of Psychology*), and conversely, many pedagogical publications are not “published” on paper at all—they appear only in electronic formats (e.g., *International Journal for the Scholarship of Teaching and Learning*).

In a review of the history and diversity of pedagogical research, Maryellen Weimer (2006) noted that almost all the major disciplines have pedagogical journals. In perhaps one of the most comprehensive listing of publication outlets for pedagogical research, Weimer’s work clearly shows that if one is interested in learning more about how to optimize teaching and learning, there are many places to look. Some examples of SoTL outlets include *Academic Commons, Canadian Journal for the Scholarship of Teaching and Learning, College Teaching, International Journal for the Scholarship of Teaching and Learning, International Journal of Teaching and Learning in Higher Education, Journal of College Science Teaching, Journal of Effective Teaching, Journal of Teaching and Learning, Journal on Excellence in College Teaching,* and *Teaching in Higher Education*. For a comprehensive list, see http://ilstu.libguides.com/sotl or http://www4.uwm.edu/sotl/help_support/pub_outlets/.

Doing SoTL: Major Research Designs

The steps for conducting research on teaching and learning mirror most of the steps used to conduct research on any topic. First, the teacher identifies a question of interest, and then reviews what has been published on the topic. Second, the teacher ascertains what is left to be discovered or needs to be researched, and then decides how to conduct that research. One common approach to this sort of research is to measure relevant aspects of what the students are learning, make a change or introduce a new method or assignment, and then measure students’ learning again to determine the extent to which the manipulation affected it (see Gurung & Schwartz, 2009, for exemplars of conducting SoTL research). Many resources now provide excellent case studies from a variety of disciplines on how to conduct classroom research, for example, Thomas A. Angelo and K. Patricia Cross (1993); Nancy L. Chick, Aeron Haynie, and Regan A. R. Gurung (2012); Robert M. Diamond (2008); L. Dee Fink (2003); Gurung, Chick, and Haynie (2009); Pat Hutchins (2000); Kathleen McKinney (2007); Thomas Pusateri (2009); Laurie Richlin (2006); Paul Savory, Amy Nelson Burnett, and Amy M. Goodburn (2007); Jeffrey Seybert (2002); Linda Suskie (2009); Barbara E. Walvoord (2004); and Maryellen Weimer (2006).
These resources highlight many ways of researching whether students’ learning improves as a result of changes teachers make to their teaching. To illustrate this point, we provide a few prototypical designs.

**Semester-to-Semester Comparisons**

The simplest way to study changes in learning is to compare grade distributions over semesters (or quarters or terms depending on the length of classes or the country). Are the class averages the same? What does the grade distribution look like? If the class averages are different across semesters, it is often a good idea to check if those differences are statistically significant. After all, any changes in grades could result from student characteristics (study habits, effort, ability), the teacher’s characteristics (teaching technique, grading style, course design), or a combination of both. Other factors may play a smaller role in affecting student learning, such as teaching in different rooms, teaching at different times of day, changes in prerequisites to the course, and so on. The more factors that teachers can measure or control while manipulating only a single specific factor, the more likely that those teachers will be able to clearly and accurately determine the impact of that factor on their students’ learning. Be mindful, though, that the semester-to-semester approach to conducting SoTL has an important shortcoming—the students in any course change from semester to semester, and many student characteristics may change as well and account for differences in student learning. Other research designs, particularly those involving within-semester changes avoid this problem.

As an exemplar study spanning multiple semesters, Randolph Smith (2008) suggested examining Patricia Connor-Greene’s (2002) study. Using a problem-based service learning approach, Connor-Greene had students enrolled in an abnormal psychology course create community resources about specific psychiatric disorders. This course-based project involved reviewing the literature about various disorders, and students made on-site visits to mental health treatment facilities and worked to create resource materials that would be useful to the community. In her first iteration, Connor-Greene asked five evaluative questions that became key to teaching of the course because they allowed systematic analysis of the effectiveness of different assignment variations that would occur over a four-semester span. In the semester that Connor-Greene launched the project, it constituted about 10 percent of students’ course grades, and the project was evaluated in the five evaluative questions. Student responses on the course evaluation prompted changes for the next implementation of this project—for instance, students believed that the project should be worth more than 10 percent of the course grade, and that noncontributing students in some groups should not be rewarded to the same extent as other hardworking students were.
In the second iteration, Connor-Greene (2002) increased the project's point value, and she graded students as individuals and as members of groups, although she noted that some groups did not integrate and synthesize information to the extent she desired. In the third iteration, Connor-Greene used multiple grading checkpoints for each of the five key components of the course, but this amount of additional work for both students and Connor-Greene consumed a lot of time. In the fourth iteration, Connor-Greene implemented online websites through which students could easily coordinate file sharing, and she could gain access to student work at any time during the semester. During the four semesters, Connor-Greene observed significant improvements in student understanding of disorders, treatment options in the area, empathy for individuals with mental disorders, and students' ability to locate treatments. Thus, the systematic and persistent application of SoTL principles lead to enhanced learning experiences for students over time.

**Within-Semester Comparisons**

There are many ways to examine changes in student learning within a semester (or quarter or term). The repeated measures design (RMD) works well in course designs that have a several similar exams or assignments. The term RMD is used in research when the assessment is identical such as when department learning outcomes or course objectives are measured year after year in the same college student sample. In such designs, the key is to identify changes in responses to similar questions over time. The measure used repeatedly consists of the same number of questions asked in the same order, and differences in the responses will be taken to indicate changes in knowledge (e.g., understanding diversity; Kernahan & Davis, 2010).

However, using identical questions is not always practical or possible in most courses. To avoid this problem, many teachers modify the RMD to include a pretest and a posttest. For example, many large general education courses give the same test at the beginning and end of the semester (e.g., a test of knowledge of governmental policy in a political science course). To test whether learning is changing during the semester, the teacher can test if the class average is changing over time, test if learning has changed from the beginning of the semester (using a class average), or even compare a single student's score to his or her previous score to determine if the student is improving during the semester. If there is a significant difference in student learning between the two assessments, it could be the result of the instruction the teacher provided in between the pretest and the posttest. Of course, teachers cannot be sure that the change resulted only from instruction unless they have measured and controlled for many other possible factors such as how much and how the student studied. If, while holding other variables constant, a teacher finds a significant difference
between the pretest and posttest measures, then he or she may be confident that the finding is a good indicator that instructional changes produced increases in learning.

As an example of SoTL work achieved within the course of a semester, R. Eric Landrum and Karen Dietz (2006) recruited volunteers from four sections of an upper-division research methods course to complete the class in a "no-points" condition. That is, student work received letter grades, and typical feedback on assignments (e.g., comments on how to improve writing, multiple-choice items answered incorrectly) remained the same as normal except that the teacher did not reveal the actual number of points to students. The authors' goal in this study was to determine if student learning would improve when the possibility of a points-centered approach was removed from the class. Thirty percent of the enrolled students volunteered for the "no points" condition. The teacher used multiple instruments to determine whether pretreatment differences existed between volunteers and nonvolunteers (tests measured learning orientation-grade orientation, achievement anxiety, and locus of control) and found no significant pretreatment differences. Likewise, Landrum and Dietz found no significant differences in the grades earned by students in the points condition versus the no-points condition (although students did earn slightly more points in the no points condition, a fact the researchers did not reveal to them until the end of the semester). In this study, students realized that they can perform adequately and without penalty without receiving grades in the form of a specific number of points. Students also realized by being volunteers for a study about teaching and learning that pedagogical research questions can be addressed ethically in a classroom, and that the instructor modeling research methods in a research methods course helps to communicate the inherent values of thinking like a social scientist. Teachers learn (through application and vicariously through published journal articles) that different treatment interventions in a classroom environment can lead to interesting insights.

SoTL around the world and across disciplines, whether in Europe, Asia, or New Zealand, economics, chemistry, philosophy, or English, consists of a variation of these basic research designs. The key is that teachers methodologically and purposely examine how their students are learning, especially as a result of any changes the teachers implement. To best conduct SoTL, one should have a clear picture of one's learning outcomes.

What Are Learning Outcomes?

Learning outcomes (LOs) are the "knowledge, skills, attitudes, and habits of mind that student take with them from a learning experience" (Suskie, 2009, p. 117). LOs provide the evidence, after the fact, that learning has occurred. Well-written LOs possess three characteristics (Mager, 1962;
Marzano, 2009): performance, conditions, and criteria. First, a LO should describe what the student should know or be able to do after the learning experience. Second, a LO may describe the conditions or context in which the demonstration of knowledge or skills is to occur. Third, teachers should establish a criterion—an acceptable level of performance—to help determine if the student has achieved the LO. Here is an example of a LO: The student should be able to create a completely error free resume that will be used for postgraduation job applications.

There are three different kinds or types of LOs: (1) knowledge and conceptual understanding, (2) thinking and other skills, and (3) attitudes, values, dispositions, and habits of mind (Suskie, 2009). These types of LOs sometimes go by different labels. For example, Robert J. Marzano (2009) used the labels declarative, procedural, and noncognitive for the three categories listed, respectively. Thus, for Marzano (2009), a declarative learning goal (knowledge) would have the sentence structure “Students will understand _____,” and a procedural learning goal (skill) would have the sentence structure “Students will be able to _____.”

Although planning LOs for students sounds intuitive, the development of meaningful and measurable learning goals is challenging. Instructional designers typically recommend that the course design process start with LOs, but in reality, many teachers design and implement using LOs as an afterthought—called the typical approach by Grant P. Wiggins and Jay McTighe (1998). So rather than the “afterthought” design, one alternative would be to design the course “backward.”

How Do Teachers Use Learning Outcomes?

If LOs and assessment practices are not centrally embedded in a course from the start, faculty may view LO assessment as additional work and view assessment in general as a burden rather than an opportunity to gauge the level to which students achieved LOs. Years ago, experts in course design suggested a different sequence of course planning steps; a sequence that is counterintuitive to many faculty members, hence the label backward design (Fink, 2003; Wiggins & McTighe, 1998). In backward design, teachers use LOs to guide course design, including both pedagogical decisions and assessment practices. Teachers articulate LOs with clarity and precision (similar to operational definitions in the social sciences) to be useful in the next step of backward design, which determines the assessment method. After LOs are defined and assessment processes are in place, then the teacher designing the course considers the pedagogical approach: Learning outcomes drive assessment practices, which in turn drive pedagogical decision making. Teachers may then examine evidence regarding the effectiveness of LOs and draw conclusions about the extent to which students achieved them.
Consideration of backward design might push teachers out of their comfort zones. Developing LOs first and an assessment plan second might lead to the conclusion, for example, that lecturing is not the optimum pedagogical approach. However, the strength of the backward design approach lies in the development of precise and clearly articulated course-relevant LOs.

SoTL and Learning Outcomes

There are many challenges to adequate measurement of LOs (e.g., Moore & Gayle, 2010). LOs can become a useful litmus test for consideration of pedagogical practices and using SoTL (Olson, 2009). In thinking about using clickers or other classroom response systems in a course—the key question for the teacher becomes “does the use of clickers help students achieve a desired LO in this course?” Similarly, many instructors have students work in groups. Does group work increase learning? Again a SoTL approach could help document potential impact on learning. In a qualitative case study of informal peer groups in a law program in Norway, Arne Vines (2010) focused on how students perceived and experienced participation in peer groups. Vines used a qualitative case study approach (monitoring student diaries and focus groups) and found that although the impact of informal peer groups on students’ LOs could not be measured, peer groups play a crucial role in the total learning environment and the learning potential of such groupings. Some learning outcomes can be more specific. For example, Obaidat and Malkawi (2009) tested the extent to which students in the United Arab Emirates understood basic concepts of motion in a physics class. The authors developed a short research-based multiple-choice test and administered the test to students in engineering and science classes. Based on their findings, Obaidat and Malkawi identified reasons for students’ failure to grasp basic concepts in physics and generated ways to modify their instructional practices in an effort to improve student learning.

LOs may be an individual teacher decision or dictated by departmental goals. Suskie (2009) likened the SoTL approach to learning objectives similarly to action research described earlier. The four steps we outline in Figure 3.1 may be helpful in identifying and tracking the usefulness and centrality of learning outcomes when teachers use a systematic SoTL-based approach to their instruction.

Entire volumes are devoted to providing detailed instruction on how to conduct assessments (e.g., Dunn, McCarthy, Baker, & Halonen, 2011; Maki, 2011)—the scope of this chapter only allows a cursory review of potential methodological approaches as seen earlier. The National Institute for Learning Outcomes Assessment (www.learningoutcomesassessment.org) provides many useful resources for the use and assessment of LOs at the collegiate level in the United States. We recommend that the assessment of
LOs use an evidence-based SoTL approach. As an organizational mechanism to frame discussions about assessment, considering the direct-indirect and objective-subjective dimensions can be valuable.

**Direct-Indirect Dimension**

Direct measures of student learning are what most teachers would call grading—the individual teacher’s evaluation of student work such as exams, writing assignments, class projects, or other overt evidence (Weldy & Turnipseed, 2010). Indirect measures of student learning may be perceptual in nature—asking students about their opinions or attitudes about how much they learned, for example, through alumni surveys (Walvoord, 2004). To see the intended heuristic value of the direct-indirect continuum in reflecting about assessment practices, compare the items entered in the top half vs. the bottom half of Figure 3.2.


### Objective-Subjective Dimension

Although placement of items along this artificial dimension is debatable, this organizational scheme helps teachers comprehend the assessment literature. Objective assessments are those that possess absolutely correct and incorrect results, whereas subjective assessments involve judgments and perceptions.

#### Direct Method: Behavior-Based Evidence From Students

- Test performance: multiple choice, true/false, matching, fill-in-the-blank, concept tests, final exams, cumulative finals
- Results from national, standardized licensing/certification exams (e.g., GRE)
- Results from classroom clicker data on tests or quizzes
- Course grades and grade distributions
- Admission rate into graduate school of graduating students
- Participation rate of students as research assistants, conference presenters, publication coauthors

#### Indirect Method: Perception-Based Evidence About Students

- Placement rates and starting salaries of new graduates
- End-of-semester course evaluation items
- National Survey of Student Engagement (NSSE) data
- Year-to-year retention rates, graduation rates
- Library use statistics/web hits
- Transcript analysis

#### Subjective Assessments—Tend to Be More Qualitative

- Alumni satisfaction and career perception/preparation surveys
- Focus groups comprising students, alumni, or employers
- Student and alumni recognition via honors, awards, scholarships received
- External examiner reviews (from departmental self-study process)
- Performance reviews by employers, graduate school advisors
- Departmental syllabus audit

#### Objective Assessments—Tend to Be More Quantitative

- Course-based group work
- Written products: term papers, lab reports
- Performance on essay questions
- Capstone experiences
- Employer/internship supervisor ratings of student skills
- Classroom assessment techniques (one-minute papers, free-writing, concept maps)
- Student portfolios
- Credit for class participation
- Student research papers, conference presentations, senior theses
- Online activities summarized and assessed (discussion boards, chat rooms)
- Self-reflection, student journals, self-critiques
- Senior exit interviews

Notes: The items listed in this 2 x 2 matrix appear in multiple sources, including McConnell et al., 2006; Passow (2011), Pusateri (2009), and Suskie (2009). The positioning of the entries within the figure represents the authors' opinions.
answers, for example, an objective test accompanied by a scoring key that allows the test to be machine scorable (Ericksen, 2009), although there are many variations on this theme (Wright, 1994). There is only one correct answer for an objective test item. Examples of objective assessment items include multiple-choice, true-false, and matching questions (Suskie, 2009). Objective assessments tend to yield quantitative outcomes.

According to Suskie (2009), the advantages of objective assessments are that (a) they are efficient, with the capability of delivering a large amount of information about student knowledge using little time; (b) large-scale, somewhat mechanized approaches can be used (e.g., bubble sheet scoring), although objective assessments do not typically assess deep processing skills like subjective assessments can; (c) they are easy and quick to score, although their creation is neither easy nor quick; and (d) a singular score (e.g., performance indicator) can be calculated from objective assessments, making this approach popular for summarizing outcomes to third parties such as administrators, lawmakers, or the general public.

Alternatively, subjective assessments produce data where a machinescorable answer solution is not feasible, and skilled judgments are needed to determine whether students have achieved corresponding LOs. Subject assessments often yield a qualitative rather than a quantitative outcome. Rubrics aid the assessment of student work that falls to the subjective side of the continuum. Multiple resources exist to aid teachers who want to use rubrics to facilitate subjective assessments (e.g., Arter & McTighe, 2001; Stevens & Levi, 2011; Suskie, 2009).

The advantages of subjective assessments are numerous, including (a) the ability to measure many important skills that objective tests cannot measure, including organization, synthesis, problem-solving, creativity, and originality; (b) skills can be assessed using subject assessments, such as having a student actually write a literature review on a research topic (rather than asking a student multiple-choice questions about how to write a literature review); (c) subjective assessments are thought to promote deep learning and help establish skills that outlast the rote memorization of textbook information; and (d) nuanced scoring can be used in subjective assessments, such as giving partial credit. To see the usefulness of the objective-subjective continuum, compare the right side to the left side of Figure 3.2.

The matrix shown in Figure 3.2 may be useful for future reviews of the assessment literature as well as for providing a conceptual framework for empirical assessment results such that multiple measures from multiple perspectives can yield insights to the extent that LOs are achieved, either at the course level or program level. However, some existing SoTL scholarship may not fit neatly into this 2 x 2 matrix. For instance, Min Yang, Beverley Webster, and Michael Prosser (2011) conducted a qualitative study in China on the variation among first-year undergraduates’ induction into different academic disciplines. Authors collected data from focus groups with students from different disciplines at a university in Hong Kong. The authors’ content analysis showed cognitive skills, professional skills, and study skills to be the important
disciplinary skills for these students. Students' varying conceptions of problem-solving and critical-thinking skills implied qualitative differences in understanding about the nature of disciplinary problems. Other researchers have integrated both behavior-based and perception-based approaches into a single study (e.g., Sizemore & Lewandowski, 2009). It may be that these research designs provide better efficiency compared with other research that addresses only one of the matrix cells. More systematic research that chronicles successes and failure to enhance engagement would provide a valuable resource for teachers looking to match a pedagogical approach with a desired learning outcome—these are clearly the ultimate goals of SoTL research.

Conclusion

Teachers around the globe are conscientiously examining their students' learning. This research on one's own classroom, published and peer-reviewed, contributes to a growing knowledge base of scholarship of teaching and learning. Whether you are a teacher in a classroom in Saudi Arabia, Nigeria, Mumbai, Shanghai, New York, or Bali, it is important to consciously and methodologically examine the effects of one's teaching on student learning. After all, teaching is more than just the delivery of content. In this chapter, we described the basic fundamentals of doing SoTL with a particular emphasis on determining and assessing course learning outcomes. Starting with clearly defining learning outcomes and then designing classroom instruction to best achieve those outcomes is critical to successful teaching and optimal learning.

References


PART II. OUTCOMES OF TEACHING AND LEARNING


Handbook of College and University Teaching
A Global Perspective

Edited by
James E. Groccia
Auburn University

Mohammed A. T. Alsudairi
King Saud University

William Buskist
Auburn University

SAGE
Los Angeles | London | New Delhi
Singapore | Washington DC