

## ASSESSING TEACHING PRACTICES AND EFFECTIVENESS FOR FORMATIVE PURPOSES

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THIS CHAPTER EXAMINES COLLEGE TEACHING PROCESSES and outcomes in order to enhance teaching and learning; we discuss activities intended to inform thinking about teaching effectiveness and also to suggest revisions for improvement. Thus this chapter is about “formative” processes that can occur at any time and are most often confidential. We are not concerned in this chapter about “summative” assessment efforts that are normally terminal activities, the results of which are public and are intended to inform decisions about the continuation of courses or curricula. Nor do we discuss the evaluation of faculty teaching or overall performance for personnel decision making. Our focus is on identifying sources of data that may be useful for improving teaching and learning as part of ongoing programs that support professional development and student achievement.

Assessing teaching effectiveness involves exploring teacher and learner experiences inside and outside the classroom as well as the results of these experiences. This means gathering instrumental data about processes such as teaching methods and classroom activities and also gathering consequential data about outcomes such as student learning. Formative assessment inherently aims to improve processes and practices (that is, instructional strategies, teaching techniques, and measurement of learning) in order to improve the results (the teacher’s skills and ability and

the student’s achievement of instructional objectives). Deciding what processes and which outcomes to assess is the first step in determining what kinds of data are needed.

Assessing how well a teaching practice is working may require assessing what the teacher is doing, or what students think the teacher is doing, and what impact it has on student learning. One basic recommendation is that faculty developers should use both instrumental and consequential data for formative purposes, but they should also be aware that this information can serve summative purposes. Most developers are not involved in summative decisions, but the work they do can have an impact on those decisions. Developers should know enough about measurement and evaluation to be able to recommend the kinds of data that are or are not useful for formative or summative purposes, and they should support the teacher’s right to retain the confidentiality of data gathered for formative purposes.

To further clarify the differences, Table 10.1 provides examples of the kinds of instrumental and consequential data usable for formative and summative purposes. Specifics are provided later in this chapter.

In this chapter, we highlight important research findings for faculty developers to consider when assessing teaching effectiveness. The following topics provide the framework for the discussion:

- What *is not* known and *is* known about college and university teaching
- How teaching and learning are linked

Table 10.1. Data for Formative and Summative Uses.

Focus →	Teaching Methods	Classroom Activities	Course Outcomes	Student Progress	Student Learning
Purposes ↓	↓	↓	↓	↓	↓
Formative →	Focus groups	Peer and other observations	Ongoing, informal assessments	Knowledge surveys	Ungraded quizzes
Summative →	Multiple data types and sources	Media records, surveys, student ratings	Costs and benefits, student learning, content issues, curricular fit	Grades; performance in later courses	All kinds of assessments, longitudinal data
Data type →	Instrumental Data		Consequential Data		

- What kinds of tools and strategies are available for the assessment of teaching
- How assessment and evaluation data can be used formatively

## What Is Not Known . . . Yet

What is clear from more than seventy years of research is that teaching and learning are complex, multidimensional, interdependent activities complicated by the fact that they require human communication and interaction. It is sobering to acknowledge that until very recently our knowledge of learning has been acquired indirectly by observation and inference about human behavior. Recent developments in cognitive science promise to lead us at last to the biological mechanisms of human cognition. As a result, many beliefs about effective teaching will likely require serious revision while other beliefs will not only prove valid but will be understood with greater clarity, thus leading to new and better instructional practices. We will have to compare and contrast extant knowledge with emerging knowledge and expand the range and depth of our pedagogical understanding. Developers should be aware of new research on the brain and learning; it can suggest how and why various pedagogies work. For example, Zull (2002) overlaid the cycle of brain activity in learning onto David Kolb's (1984) "experiential learning" model to show how similarly the two operate.

What is known is linked to the fact that, historically, the research about teaching and learning has primarily involved traditional students in traditional settings. This research offers a solid foundation for teaching in comparable contemporary settings. However, beginning in the 1960s teaching began to change, albeit slowly; what we do not know yet is how these changes have affected teaching and learning, that is, which practices are best used where and to what effect. Happily, acknowledging what is *not* known can be consistent with a spirit of inquiry and reflection that developers value in their own practices and aim to cultivate in clients. In a changing environment, assessing teaching effectiveness may offer the only window of opportunity for improving or enhancing that effectiveness.

Identifying reader-friendly summaries of current reviews of the literature is an essential part of getting the larger view needed to put research findings in perspective. Developers must come to understand research well enough to know when to suggest what might work and when to avoid the imposition of new ideas that might not work due to resistance, inadequate

resources, or other factors. Many resources exist to help new developers, and perhaps the Professional and Organizational Development (POD) Network listserv and Web site are among the most accessible. There is a voluminous literature on college teaching and learning, but often developers need to respond quickly to a specific question from one teacher. When there is not time for a deep literature search, the POD listserv can put one in touch with scores of experienced practitioners. Accessing the POD Web site opens a host of possible connections to teaching and learning materials. Publications such as *The Teaching Professor* (<http://www.teachingprofessor.com/>) and *The National Teaching-Learning Forum* (<http://www.ntlf.com/he>) distill important findings from the literature in easy-to-use formats. The Individual Development and Educational Assessment (IDEA) Center provides resources created in collaboration with POD; these resources are specifically designed to support formative and summative use of the IDEA student ratings instrument (<http://www.theideacenter.org>). Of course, more formal literature is always available in educational and discipline-specific journals and the many books published every year.

## So What Do We Know?

The skills, behaviors, motivations, and individual styles of teachers and learners in “traditional” instructional settings have been investigated in depth; and much is known about teacher knowledge (Shulman, 1986), the dimensions of college teaching (Feldman, 1997), effective teaching practices (McKeachie & Svinicki, 2006), the effects of college on students (Pascarella & Terenzini, 1991, 2005), promoting student success (Kuh et al., 2005), individual differences among teachers and learners (Grasha, 1996), motivational factors (Theall, 1999a; Włodkowski, 1998, 1999), and emerging knowledge about brain functions and their connection to learning (Zull, 2002). Knowledge of foundational research and theory is important for developers and instructional consultants as a basis for their own decision making, but it is also important because they serve as a resource for faculty members unfamiliar with this literature.

### *Teacher Knowledge and the Faculty Developer*

Shulman (1986) identified three kinds of knowledge important for teaching. “Content knowledge” is the deep understanding of the subject matter. “Pedagogical content knowledge” is an understanding of basic teaching and

learning strategies applied to teaching the subject. “Curricular knowledge” is a refined combination of the first two, gained as the teacher develops a repertoire of specific understanding, skills, and strategies that relate to teaching the subject matter to a variety of students effectively. Curricular knowledge also involves the ability to identify important principles and to translate complex concepts and ideas into understandable and usable form. Curricular knowledge embodies instructional strategic thinking since teachers with curricular knowledge are able to assess student learning and to respond to and remedy issues and problems impeding learning. Assessing teaching involves examining the extent to which a teacher possesses these three kinds of knowledge, and assisting teachers involves helping them to move from being primarily content experts to enhancing the connections between content and effective pedagogy.

A parallel notion can be proposed for faculty developers. While the faculty member provides necessary content knowledge and perhaps some amount of pedagogical content knowledge, faculty development and related services providers must possess:

- *Their own content knowledge* (theories and practices related to effective teaching and learning across the disciplines)
- *Their own pedagogical content knowledge* (that is, consultative and instructional methods to help faculty members in a variety of instructional and disciplinary settings enhance or acquire teaching and instructional design skills and knowledge)
- *Their own curricular knowledge* (application of deep knowledge, interpersonal, and consultative skills to specific situations)

These broad categories encompass diverse areas such as assessment and evaluation skills, knowledge of instructional technology applications, understanding of individual differences, and knowledge of other factors affecting teaching and learning.

Skilled developers can assess teaching and learning situations and suggest effective strategies or help their clients develop and apply them. They can integrate research and theory, and they use a variety of strategies for working with diverse clients (Brinko & Menges, 1997; Lewis & Lunde, 2001; Theall & Franklin, 1991a). New developers, like beginners in any field, move from novice to expert roles over time. Experienced practitioners have knowledge and skills similar to the “curricular knowledge” identified by Shulman (1986), but beginners may not yet have these skills. However, new developers can benefit from the experience of their clients and particularly by working with senior faculty. New developers may have pedagogical

knowledge as a result of their graduate training or, if coming from faculty positions, pedagogical content knowledge in their disciplinary areas. Locating and working with experienced faculty is one way to broaden the base of pedagogical content knowledge and curricular knowledge while at the same time establishing a cadre of supportive colleagues.

### *Dimensions of College Teaching*

Another way of looking at college teaching is to consider whether it has identifiable dimensions. Research in this area has been summarized by Feldman (1997, 2007), and his summaries provide a solid foundation of knowledge about college teaching and its relationship to learning. Seventeen major dimensions were identified and rank ordered according to the strength of correlation to student achievement and to students' ratings of teachers. The most important dimensions relating to student achievement include

- The teacher's organization and preparation
- The teacher's clarity and "understandableness" (Feldman's term)
- The teacher's ability to promote learning
- The teacher's ability to stimulate students' interest in the subject

The four dimensions most strongly related to student ratings were

- The teacher's ability to stimulate students' interest in the subject
- The teacher's clarity and "understandableness"
- The teacher's ability to promote learning
- The teacher's provision of intellectual challenge

There is clear evidence of the correlation of student ratings of teaching effectiveness with student achievement (Cohen, 1981) and the effectiveness of combining student ratings feedback with knowledgeable instructional consultation (Cohen, 1980).

Faculty developers need to be prepared to apply these findings in interpreting student ratings but also to appreciate the limits of student ratings. One generalization holds: while some aspects of teaching loom large in every setting, excellence can be achieved in different ways. Helping faculty members understand and appreciate the validity of student ratings in such terms is an art and challenge for faculty developers and requires a careful reading of reviews in the field and practice guides based on them (Marsh, 2007; Murray, 2007; Perry & Smart, 2007; Theall & Feldman, 2007).

### *Effects of College and the Importance of Student Engagement*

Perhaps the broadest generalization one can make about the effects of a college education is that the entirety of the experience is what counts. Pascarella and Terenzini (1991, 2005) pointed out that classroom and subject learning are important; but the application of new learning, socialization, maturation, experimentation, the development of life skills, and exposure to new ideas and people are major elements in bringing about change. Kuh et al. (2005) have demonstrated the importance of students' engagement in their own learning. Faculty members may need to understand this broader perspective and the importance of methods promoting learning strategies that contribute to student engagement in order to help teachers incorporate strategies that capitalize on what we know about the effects of college on students.

### *Motivation and Related Factors*

Student motivation is the central mechanism of engagement, and motivation and emotion are key elements in learning (Zull, 2002). Theall (1999b) reviewed fourteen motivational models and extracted six common components: (a) inclusion, (b) attitude, (c) relevance, (d) competence, (e) leadership, and (f) satisfaction. These factors connect logically with contemporary teaching methods involving activity, engagement, collaboration, and discovery; links to the dimensions of teaching are also apparent.

Motivational outcomes are also connected to students' perceptions of their own efficacy (Bandura, 1977) and to their attributions about their performance. Students who succeed are much more likely to internalize that success ("my ability and/or effort") and to anticipate future success. Perry (1991) and other researchers have demonstrated that students who are having academic difficulty can be helped to take a more proactive, positive approach. They learn to accept more responsibility for their learning, and they begin to understand that they can succeed through their own efforts. Learning is enhanced, which leads to satisfaction based on performance; more important, this enhancement has an impact on intrinsic motivation. In other words, students can say, "I learned something valuable through my own efforts, and I will be able to do it again."

Motivation and consulting effectiveness is also worth noting. The same principles and strategies used with students apply to working with faculty (Theall, 2001). Faculty developers must be familiar with motivational and related principles and techniques to help faculty and to help themselves be

more effective in consultative roles. Like faculty members who get intrinsic motivation from the successes of their students, developers are motivated by the successes of their faculty clients; like students, faculty members and developers should be able to say, “I did it myself, and I can do it again.”

## **Assessment: The Link to Learning**

We often hear the question, “If there is no learning, can there have been any teaching?” Phrased another way, the question asks whether the essence of teaching is (a) the design of instruction, (b) the delivery of information and required activities, or (c) the result of that delivery (learning). The question is not trivial because proponents of all three choices hold strong beliefs, sometimes favoring one choice to the exclusion of the others. The best strategy for assessing either teaching or learning effectiveness is to gather different kinds of evidence, and the greatest danger is sole reliance on only one kind of data. When faculty developers are asked to help teachers gather evidence, knowledge of quantitative and qualitative methods, test construction, and survey methods is particularly useful. However, equally important are the skills needed to interpret, use, and translate the data for faculty members (Franklin & Theall, 1990; Menges & Brinko, 1986; Theall & Franklin, 1991b). The roles and efforts of instructional consultants and developers become much more important when we keep this issue in mind because the outcomes of our work affect not only teaching and learning but also faculty careers and future student success.

Systematic instructional development and assessment are means to many ends. The key to gauging the impact of any practice or innovation is a systematic approach that uses assessment to gather the relevant data. One of the most powerful tools for a faculty developer is cultivating a commitment to reflective practice on the part of faculty members, helping them to adopt a “scholarship of teaching and learning” strategy to assess systematically the effectiveness of their instructional design. Systematic assessment logically follows systematic design, and it is the action that leads to improvement.

For developers, this means exploring the teacher’s goals and objectives; the course content issues and requirements; the students’ predispositions, skills, and knowledge; the ways in which learning is assessed; and the overall environment in which the teaching and learning take place. Faculty developers cannot be wed to only one or two favorite instructional methods. They must help teachers to work through instructional problems using a systematic process that considers many aspects of a specific situation and to model an instructional planning and development process that is



transferable to other situations. The process helps teachers to construct their own understanding of teaching and learning, thus enabling them to provide more learning opportunities for their students.

Faculty developers must possess clear personal definitions and positions relating to pedagogical matters. They must also be able to work with those who hold differing views about such matters and to facilitate discussions that lead to balanced emphases on teaching and learning, using reliable and valid data for decision making. Equally important, development professionals must be sufficiently skilled in psychometrics (measurement) to assist faculty in using test or assessment data and in constructing and validating their own classroom tests. Finally, developers must be sensitive to the political dynamics and realities within departments and be able to adjust their strategies so as to be most effective given existing contextual factors. Plentiful resources are available to help new educational developers become more knowledgeable in these areas.

## Assessment Tools and Strategies

There are several useful sources of information about assessing teaching and learning (for example, Angelo & Cross, 1993; Arreola, 2007; Brinko & Menges, 1997; Chism, 2007; Lewis & Lunde, 2001). Specifically, Berk (2006) provided an array of thirteen strategies particularly useful to instructional developers and consultants who must translate a large body of literature for faculty and administrators in order to help them interpret and use assessment data independently.

We often hear that formative and summative processes must be kept absolutely separate, but we believe that this is a mistake. The two kinds of purposes and the data they generate can be mutually supportive. However, the focus of this chapter is on the application of many kinds of information for the purpose of helping teachers enhance their teaching. Faculty developers should not be involved in summative decision making, and they should be free from pressures to violate the necessary confidentiality of a formative relationship. (See “POD Network Ethical Guidelines” at [http://podnetwork.org/faculty\\_development/ethicalguidelines.htm](http://podnetwork.org/faculty_development/ethicalguidelines.htm).)

### *Tools for Assessing Teaching*

Students can provide critical information about teaching. Student ratings of courses may be gathered with the use of a nationally distributed instrument, and one can feel comfortable that the instrument has

undergone extensive validation and testing. Many institutions, however, prefer to use instruments developed and analyzed locally. While many such instruments have been tested and validated over time, a far greater number of local instruments have not undergone sufficient investigation. The use of a nonvalidated instrument can pose a threat to the quality of the data, the ability of users to correctly interpret and use results, and the potential of the instrument and process to be beneficial. Indeed, these untested instruments, especially when improperly analyzed and reported, can pose dangers to faculty careers. Many of the complaints heard about student ratings stem from the use of poor instruments and the misuse and misinterpretation of the information they provide.

Most student ratings instruments allow students to make comments about the course and the teacher. These comments can be particularly valuable for formative purposes; they can provide the insights, reasoning, and affective issues that are not well represented in quantitative data from a survey. However, the danger in using students' comments is that strongly worded negative comments can have a disproportionately powerful effect. One harsh, unfair, or even inaccurate comment can diminish the importance of several positive notes from students; and it becomes important for consultants to provide a balance that allows the teacher to make best use of this information.

Other sources of information about teaching must be used to supplement data gathered from students. Small Group Instructional Diagnosis (SGID) (Clark & Bekey, 1979) is a technique that is simple, efficient, and useful for clarifying comments teachers receive; a newer process called Quick Course Diagnosis (Millis, 2004) offers advantages in the usefulness of the data generated and the ability to produce reports that can include specific examples of these data. Another useful strategy for cross-checking student ratings results is videotaping a class and reviewing the tapes with the teacher. Video documentation is unambiguous and can be illuminating, but some cautions must be kept in mind. First, the presence of the camera influences the teacher and the students; what is seen and heard on tape may not represent what happens on a regular basis. Moreover, many teachers do not react well to seeing themselves on tape for the first time and are overly self-critical. These cautions suggest that videotaping, if done at all, should be done frequently enough to provide a representative sample of classroom activity and dynamics and to reduce or remove the influence of the camera itself. More exposure to video documentation also reduces the tendency of teachers to overemphasize trivial issues related to appearance or verbal habits.

Additional information can also be provided by the teacher, peers, subject or pedagogy experts from beyond the home campus, the consultant-developer, and by administrators (with specific cautions and limitations). Portfolios prepared and provided by the individual are an accepted source of information (Seldin, 1991); formative review can include discussion of teaching philosophies, narratives about classroom and other teaching experiences, reactions to student work or student evaluations, and other kinds of information. Developers who establish connections with department chairs and other administrators and who work with senior faculty will have a solid base of knowledge about important issues and even criteria used to judge portfolio materials. Knowing about the technical issues and the procedures of the evaluation process can be very helpful as developers work with new and junior faculty.

Two issues must be kept in mind when administrators are involved in classroom or other observations: (a) the observer must be acceptable to, trusted by, and credible to the teacher; and (b) the process must be considered confidential. Even when it is possible for a department head to observe teaching, that administrator should not use information from the observation as evidence in summative processes. This situation is delicate, and sometimes institutional or department policy requires observation as part of the summative process. If that is the case, then it is best not to have an administrator observe for formative purposes. Peer review is less subject to concerns about a formative-summative conflict. However, it is important to ensure that both the teacher and the observer are comfortable with the process and each other and to follow established processes (Chism, 2007) that provide the greatest efficiency and most useful information. External expert reviewers can comment on course content, instructional design, syllabi, course readings or activities, and assessment strategies. Also, they can examine students' tests or other work. Such review is necessary when no local peer is available who is sufficiently knowledgeable of the content area or other aspects of the instruction.

It is particularly difficult for an instructional developer or consultant to assess and enhance teaching and learning without having observed the teacher and the class. Firsthand observation of several class meetings and review of videotapes always provides information that clarifies or corroborates information from student ratings, observations by others, portfolio materials, and data from other sources. Instructional consultants and developers must be well versed in the student ratings literature, in observation and assessment techniques, and in organizing and coordinating data gathering. Also, they should be skilled in interpreting the data so as

to provide useful feedback to the teacher. Favoring only quantitative or qualitative data is a disservice to the client, so data from multiple sources must be used.

### *Tools for Assessing Learning*

The most common assessment device of student learning is the classroom test. Classroom tests, however, are rarely validated; and consequently test results may be less reliable than those from standardized measures (for example, professional certification tests in many fields) or from validated instruments. Tests can be examined to determine their connection to teaching goals, instructional objectives, and teaching methods. Developers can help teachers construct classroom tests and conduct basic validation activities such as item analysis. Standardized tests, especially those used in professional licensure and certification, serve similar purposes and have the virtue of being usable for comparing individual performance or the performance of groups of students. These tests focus on content generally agreed to be important in the field, and thus they can also be used to validate the content of courses or programs.

Recent emphasis on the assessment of learning outcomes has provided an array of effective, efficient, and convenient tools. Angelo and Cross (1993) compiled a large number of Classroom Assessment Techniques (CATs), and Walvoord (2004) suggested simple ways of assessing learning outcomes at the department and program levels. These tools are important because faculty members must often contribute assessment data to program evaluation projects or to disciplinary and other accreditation teams. Nuhfer and Kipp (2003) described “knowledge surveys” that collect students’ self-reports of their confidence about their subject knowledge. This information can help teachers adjust course content, put extra emphasis on areas of difficulty, and determine how successfully students have met the instructional objectives.

### *Classroom Research and the Scholarship of Teaching and Learning*

The Scholarship of Teaching and Learning (SoTL) proposed by Boyer (1990) sought to reframe teaching as a kind of scholarship; by inference that meant to include as part of teaching the same kinds of questions and issues and processes as in assessment. Cross and Steadman (1996) offered guidelines for investigations of classroom process and outcomes as a way to implement the scholarship of teaching. They noted that classroom

research does not always require the large samples and statistical procedures common to more traditional empirical research, but that classroom research can be focused, reflective, and useful without the need to achieve significant differences. These approaches present excellent opportunities for developers since helping teachers answer classroom questions often means helping the department and the institution as well. As the emphasis on pedagogical scholarship moved to The Scholarship of Teaching and Learning (Shulman & Hutchings, 1999) and making the research work more similar to reviewed, public scholarship in disciplinary fields, another important outcome became apparent: when faculty developers assist teachers with SoTL projects that result in professional presentations or publications, a major career development objective is achieved. In other words, *the value of development goes beyond enhancing teaching and learning and becomes a part of the faculty member's professional development agenda.*

## Using Data to Enhance Teaching and Learning

A broad array of assessment possibilities exists, from simple dialogue with the teacher to formal investigation of teaching and learning issues. This array is critical to understanding both process and outcomes, and it provides a rich source of information for personal and professional growth. Faculty developers provide important service when they help teachers and departments to blend assessment, evaluation, and SoTL. These efforts work best as complementary activities, and none works as well in a vacuum. Faculty developers will succeed if they keep in mind some basic guidelines for effective consulting and if they attend to the unique aspects of working with faculty. The following list provides helpful guidelines.

### GENERAL GUIDELINES FOR ENHANCING TEACHING AND LEARNING

- Establish your own credibility as a knowledgeable and skilled colleague and academic professional by as much involvement as possible in teaching, scholarship, and service.
- Work to make your services central to the mission of your institution as well as the needs of your clients.
- Establish a positive environment for the client (you are supporting professional growth and enhancing performance, not fixing a broken teacher).

- Communicate regularly and in as many ways as possible (face to face as well as electronically).
- Listen, listen, listen.
- Follow up and keep in touch.
- Help the client gather useful data.
- Ensure confidentiality of the process and any information it generates.
- Do not overextend, overcommit, or make promises you cannot keep.
- When possible, create peer networks or other mechanisms for individuals to avoid isolation (especially for new faculty).
- Work with administrators (especially department chairpersons) to establish yourself and your services and also to understand their perspectives and needs better.
- Be a strong advocate for best practice and excellence.
- Focus on success for the teacher and the students.
- Listen, listen, listen.

#### SPECIFIC GUIDELINES FOR ENHANCING TEACHING AND LEARNING

- Stress the need for useful data from many sources, and seek additional data whenever possible.
- Help the teacher to separate teaching goals (what the teacher will do) from learning outcomes (what the students will acquire) and then to use a systematic process to design instruction that allows both to be achieved.
- Begin with and build on strengths, but do not avoid problem issues.
- Balance data from students with data from other sources.
- Note the numbers of comments and quantitative responses from student ratings, and be sure there are representative samples of both.
- Help the teacher integrate and interpret the data with specific purposes in mind (that is, have targets of opportunity and specific goals for the process).
- Suggest practical, possible interventions or changes with the potential for short-term as well as long-term improvements.
- Blend assessment and evaluation data along with SoTL results, other documentation, and direct observation whenever possible.

- View the assessment of teaching as having multiple objectives that culminate not only in enhanced teaching and learning but also in enhanced opportunities for professional growth and advancement.

## Conclusion

Ultimately, instructional and faculty development are activities that require effective partnerships. The direct consultant-client relationship is supplemented by the participation of others, but the most effective consulting takes place in environments where all stakeholders actively support continuous efforts to enhance teaching and learning. Many kinds of assessment data must be used, and careful examination of context and other issues is as important as review of information such as test scores or student-provided data. Beyond the immediate assessment process is the extent to which institutional policy and practices provide credible and clear evidence of the valuing of teaching. Faculty developers can provide an important service to their clients and institutions by being actively involved in advocating for strong and sustained resources for personal and professional growth.

## REFERENCES

- Angelo, T. A., & Cross, K. P. (1993). *Classroom assessment techniques: A handbook for college teachers* (2nd ed.). San Francisco: Jossey Bass.
- Arreola, R. A. (2007). *Developing a comprehensive faculty evaluation system* (3rd ed.). Bolton, MA: Anker.
- Bandura, A. (1977). Self efficacy: Toward a unifying theory of behavioral change. *Psychological Review*, 84(2), 191–215.
- Berk, R. A. (2006). *Thirteen strategies to measure college teaching*. Sterling, VA: Stylus.
- Boyer, E. L. (1990). *Scholarship reconsidered*. Princeton, NJ: Carnegie Foundation for the Advancement of Teaching.
- Brinko, K. T., & Menges, R. J. (1997). *Practically speaking: A sourcebook for instructional consultants in higher education*. Stillwater, OK: New Forums.
- Chism, N.V.N. (2007). *Peer review of teaching* (2nd ed.). Bolton, MA: Anker.
- Clark, D. J., & Bekey, J. (1979). Use of small groups in instructional evaluation. *Insight into teaching excellence*, 7(1), 2–5. Arlington: University of Texas at Arlington.

- Cohen, P. A. (1980). Effectiveness of student-rating feedback for improving college instruction: A meta-analysis. *Research in Higher Education*, 13(4), 321–341.
- Cohen, P. A. (1981). Student ratings of instruction and student achievement: A meta-analysis of multisection validity studies. *Review of Educational Research*, 51(3), 281–309.
- Cross, K. P., & Steadman, M. H. (1996). *Classroom research: Implementing the scholarship of teaching*. San Francisco: Jossey Bass.
- Feldman, K. A. (1997). Identifying exemplary teachers and teaching: Evidence from student ratings. In R. P. Perry & J. C. Smart (Eds.), *Effective teaching in higher education research and practice*. New York: Agathon Press.
- Feldman, K. A. (2007). Identifying exemplary teachers and teaching: Evidence from student ratings. In R. P. Perry & J. C. Smart (Eds.), *The scholarship of teaching and learning in higher education: An evidence-based perspective* (pp. 93–129). Dordrecht, The Netherlands: Springer.
- Franklin, J. L., & Theall, M. (1990). Communicating ratings results to decision makers: Design for good practice. In M. Theall & J. L. Franklin (Eds.), *New directions for teaching and learning*, no. 43. *Student ratings of instruction: Issues for improving practice* (pp. 75–96). San Francisco: Jossey-Bass.
- Grasha, A. F. (1996). *Teaching with style*. Pittsburgh, PA: Alliance.
- Kolb, D. A. (1984). *Experiential learning: Experience as the source of learning and development*. Englewood Cliffs, NJ: Prentice-Hall.
- Kuh, G., Kinzie, J., Schuh, J. H., Whitt, E. J., & Associates (2005). *Student success in college*. San Francisco: Jossey-Bass.
- Lewis, K. G., & Lunde, J. P. (Eds.). (2001). *Face to face: A sourcebook of individual consultation techniques for faculty/instructional developers*. Stillwater, OK: New Forums.
- Marsh, H. W. (2007). Student evaluations of university teaching: Dimensionality, reliability, validity, potential biases, and usefulness. In R. P. Perry & J. C. Smart (Eds.), *The scholarship of teaching and learning in higher education: An evidence-based perspective* (pp. 319–384). Dordrecht, The Netherlands: Springer.
- McKeachie, W. J., & Svnicki, M. (Eds.). (2006). *Teaching tips. Strategies, research, and theory for college and university teachers* (12th ed.). Boston: Houghton Mifflin.
- Menges, R. J., & Brinko, K. T. (1986, April). *Effects of student evaluation feedback: A meta-analysis of higher education research*. Paper presented at the meeting of the American Educational Research Association. San Francisco. (ERIC Document Reproduction Service No. ED 270 408)



- Millis, B. J. (2004). A versatile interactive focus group protocol for qualitative assessments. In C. M. Wehlburg & S. Chadwick-Blossey (Eds.), *To improve the academy*, Vol. 22. *Resources for faculty, instructional, and organizational development* (pp. 125–141). Bolton, MA: Anker.
- Murray, H. G. (2007). Research on low-inference behaviors: An update. In R. P. Perry & J. C. Smart (Eds.), *The scholarship of teaching and learning in higher education: An evidence-based perspective* (pp. 184–200). Dordrecht, The Netherlands: Springer.
- Nuhfer, E., & Kipp, D. (2003). The knowledge survey: A tool for all reasons. In C. Wehlburg & S. Chadwick-Blossey (Eds.), *To improve the academy: Vol. 21. Resources for faculty, instructional, and organizational development* (pp. 59–74). Bolton, MA: Anker.
- Pascarella, E. T., & Terenzini, P. T. (1991). *How college affects students*. San Francisco: Jossey-Bass.
- Pascarella, E. T., & Terenzini, P. T. (2005). *How college affects students. Vol. 2: A third decade of research*. San Francisco: Jossey Bass.
- Perry, R. P. (1991). Perceived control in the college classroom. In J. C. Smart (Ed.), *Higher education: Handbook of theory and research* (Vol. 7, pp. 1–56). New York: Agathon.
- Perry, R. P., & Smart, J. C. (Eds.). (2007). *The scholarship of teaching and learning in higher education: An evidence-based perspective*. Dordrecht, The Netherlands: Springer.
- Seldin, P. (1991). *The teaching portfolio: A practical guide to improved performance and promotion/tenure decisions*. Bolton, MA: Anker.
- Shulman, L. S. (1986). Those who understand: Knowledge growth in teaching. *Educational Researcher*, 15(2), 4–14.
- Shulman, L. S., & Hutchings, P. (1999). The scholarship of teaching: New elaborations, new developments. *Change*, 31(5), 11–15.
- Theall, M. (Ed.). (1999a). *New directions for teaching and learning, no. 78. Motivation from within: Encouraging faculty and students to excel*. San Francisco: Jossey-Bass.
- Theall, M. (1999b). What have we learned? A synthesis and some guidelines for effective motivation in higher education. In M. Theall (Ed.), *New directions for teaching and learning, no. 78. Motivation from within: Encouraging faculty and students to excel* (pp. 99–109). San Francisco: Jossey-Bass.
- Theall, M. (2001). Thinking about motivation: Some issues for instructional consultants. In K. G. Lewis & J. P. Lunde (Eds.), *Face to face: A sourcebook of individual consultation techniques for faculty/instructional developers* (pp. 77–91). Stillwater, OK: New Forums.

- Theall, M., & Feldman, K. A. (2007). Commentary and update on Feldman's (1997) "Identifying exemplary teachers and teaching: Evidence from student ratings." In R. P. Perry & J. C. Smart (Eds.), *The scholarship of teaching and learning in higher education: An evidence-based perspective* (pp. 130–143). Dordrecht, The Netherlands: Springer.
- Theall, M., & Franklin, J. L. (Eds.). (1991a). *New directions for teaching and learning, no. 48. Effective practices for improving teaching*. San Francisco: Jossey-Bass.
- Theall, M., & Franklin, J. L. (1991b). Using student ratings for teaching improvement. In M. Theall & J. L. Franklin (Eds.), *New directions for teaching and learning, no. 48. Effective practices for improving teaching* (pp. 83–96). San Francisco: Jossey-Bass.
- Walvoord, B. E. (2004). *Assessment clear and simple: A practical guide for institutions, departments, and general education*. San Francisco: Jossey-Bass.
- Wlodkowski, R. J. (1998). *Enhancing adult motivation to learn: A comprehensive guide for teaching all adults*. San Francisco: Jossey-Bass.
- Wlodkowski, R. J. (1999). Motivation and diversity: A framework for teaching. In M. Theall (Ed.), *New directions for teaching and learning, no. 78. Motivation from within: Encouraging faculty and students to excel* (pp. 7–16). San Francisco: Jossey-Bass.
- Zull, J. E. (2002). *The art of changing the brain*. Sterling, VA: Stylus.