What Really Are Student Learning Outcomes?

Peter Hernon

This paper differentiates between student outcomes and student learning outcomes. The former are accountability metrics that characterize institutional success in simple terms and that are important to outside stakeholders. The latter might involve a partnership among those teaching in a program of study, and the goal of such a partnership is to improve the quality of the educational experience while holding institutions accountable to their declared mission.

For years, academic libraries have gathered and reported metrics, predominantly inputs and outputs that focus on their expenditures, activities, processes, and services. It is as if the larger environment in which libraries function did not exist or librarians and others believed libraries were unique and should be judged accordingly. The discussion of metrics now includes new perspectives and other types of metrics, especially outcomes or expressions of the impact of library services on those groups identified in the institutional mission statement. In academe, a recurring question is, "What is the longitudinal impact of library services and programs on the educational experience of students?" The answer involves the use of a type of outcome that is centered on active learning, in which engages students in reading, discussing, listening, reflecting, and communicating about what they are learning by applying critical thinking and problem-solving exercises, case studies, role playing, and other activities to course and program content.

For years the federal government has questioned the affordability of a college education and supported making college available to everyone who wants an education. The Department of Education, under the administration of President George W. Bush, has had an adversarial relationship with higher education over the validity of institutional claims about educational success. In the summer of 2008, attention shifted to the Higher Educational Opportunity Act (HR 4137), which was enacted for a five-year period and reframed the discussion. Totaling more than 1,150 pages the legislation largely sides with colleges and universities on accreditation, rewards institutions that limit tuition increases or freeze tuition for each incoming cohort of students (in the form of extra Pell Grant aid for students), requires institutions to list the prices of required and recommended textbooks for each course to the "maximum extent practicable," and supports the use of student outcomes. Student

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outcomes in fact are outputs and reflect admission, graduation, retention, course and program completion, and transfer rates as well as rates of entry to graduate school and job placement. Institutions often benchmark such statistics so that they can make comparisons to other institutions over time.

Often regional- and program-accrediting organizations ask for similar data and judge institutions of higher education in terms of quality, which is not viewed as economic efficiency and productivity. As Ronald L. Baker states,

> Quality is measured primarily in terms of institutional integrity, the characteristics of resources and processes, and manner and degree to which an institution fulfills its mission and goals. In that context, assessment—the process of gathering data or measures and assembling them in some understandable form—is an important means to document evidence of outcomes and achievement. Further, … institutions [should] form judgments based upon an evaluation of the assessment data and … use the results of those evaluations to inform and improve planning.[1]

Reflecting on my writings on outcomes assessment, my public presentations on the topic, and my discussions with individuals serving or having served in accrediting organizations, this paper provides an overview of assessment and the role of outcomes in assessment. "Assessing institutional or program results" in terms of the promises expressed in mission statements, as Baker notes, "is a means to provide a foundation of evidence to demonstrate that the institution [or program] is willing and equipped to examine itself on an ongoing basis."[2] Librarians can form formal partnerships with academic departments and programs to meet different learning goals that support active learning. (And, they have done so.) Such goals "are the foundation of meaningful assessment."[3]

An Overview of Assessment

There is a notion within government and accrediting organizations, and perhaps other stakeholders, that "American colleges have a long way to go in showing that they are effectively educating students."[4] One of the best expressions of the need for improvement comes from the National Leadership Council for Liberal Education & America's Promise, which declared:

> … few departments and institutions have developed curricula and pedagogies that incrementally foster and assess students' skills in inquiry and innovation as they advance through a course of study. Fundamental change is needed, at all levels of education to help students develop the intellectual and practical skills of inquiry, innovation, and effective communication.[5]

As already noted, Baker defines assessment but does not adequately distinguish between assessment and evaluation. Evaluation is the process of identifying and collecting data about specific services or activities; establishing criteria according to which their effectiveness, economic efficiency, value, or worth can be judged; and determining both the quality of the service or activity, and the extent to which the service or activity accomplishes stated goals and objectives. As such, evaluation is a decision-making tool that assists the staff of an organization in allocating to those activities and services the necessary resources to best facilitate the accomplishment of organizational goals and objectives. Formative evaluation provides feedback for continuous quality improvement, and summative evaluation judges a completed program or service.[6] Another characterization of evaluation is that it applies to faculty when they assign grades to judge student learning. "Grades are determined by students' ability to master the content of a course, not by any larger assessment of what has changed in the students' understanding, attitudes, or perspectives."[7]

Accrediting organizations view assessment as feedback to faculty and others from students and as determining how well and/or how much students *as a group* learned as they progress through a program of study. Linda Suskie characterizes assessment as "the ongoing process of

- Establishing clear, measurable expected outcomes of student learning;
- Ensuring that students have sufficient opportunities to achieve those outcomes;
- Systematically gathering, analyzing, and interpreting evidence to determine how well student learning matches our expectations; and

- Using the resulting information to understand and improve student learning."[8]

Assessment "engage[s] a campus community collectively in a systematic and continuing process to create shared learning goals and to enhance learning."[9] That engagement should go beyond individual courses and the achievement of course objectives or even outcomes. It should consider all of the courses comprising a program of study and what students learn throughout that program. Learning includes, but is not limited to, domain knowledge covered in individual courses. Learning might be viewed in terms of shared learning goals that are student-focused, reflect what students have indeed learned, and provide feedback to the institution and its programs for the purpose of improving the educational experience.

Assessment illustrates the progress that higher education programs make in fostering active learning and ensures that institutions "do a better job explaining how they measure their own students' success."[10] Assessment therefore encourages greater transparency in showing what colleges and universities accomplish.

Assessment informs practice by enabling institutions and their accreditors to make judgments about how well institutions and their programs conform to outside standards and guidelines, and how those institutions and programs relate any information gathered to the planning process, one focused on the educational experience.[11] In effect "the assessment of student learning is a major component of the assessment of institutional effectiveness."[12]

Suskie makes an important observation, one that faculty typically ask when they assess student learning for the first time, namely how rigorously must they collect the evidence on which they rely. She notes that "most faculty and staff lack the time and resources to design and conduct rigorous, replicable empirical research studies with impartial distance." She continues,

> They instead aim to keep the benefits of assessment in proportion to the time and resources devoted to them. If you take the time and effort to design your assessment reasonably carefully and collect collaborating evidence, your assessment results may be imperfect but will nonetheless give you information that you'll be able to use with confidence to make decisions about teaching and learning.[13]

An additional observation is that both faculty and librarians tend to be too ambitious when they first engage in assessment. They make numerous promises and try to cover too much. It is better to start modestly and build on the foundation as they discover problems and work to resolve them.

An Example of Statewide Assessment

Thirty-two public colleges and universities in Minnesota have launched an online accountability site known as the Accountability Dashboard. This system "is designed as a tool for the Board of Trustees, institutions, policymakers and other visitors. The Board and system institutions use this information to improve … [their] services to students and to the citizens of Minnesota."[14] Exactly how the data gathered support the planning process to improve accountability, teaching and learning, and support services merits explanation.

This accountability system apparently tracks and reports ten student outcomes, based on ordinal-level measurement, such as net tuition and fees as a percentage of median income, student persistence and completion, employment rate of graduates, percentage change in enrollment and condition of facilities. Some so-called organizational productivity metrics include time waiting in a phone queue and, for walk-in customers, turn-around time for e-mail inquiries, transaction speed and volume, and the number of transaction per staff. One metric that records the pass rate on licensure examinations could also comprise a student learning outcome. Even though none of the metrics involve libraries, librarians could collect qualitative data that reflect their contributions to meeting pass rate or other metrics.

Student Learning Outcomes

Student learning outcomes are statements that describe what students should be able to demonstrate. Such outcomes can be applied at the course, program, department, division, discipline, and institutional levels. Accreditation focuses on the program and institutional levels. When the focus exceeds the course level, there obviously must be collaboration or consensus among educators "about how, when, and where they address these outcomes."[15] When gathered longitu-

dinally, student learning outcomes reflect changes in overall program or institutional performance.

Student learning outcomes can be subdivided into higher-order and lower-order competencies based on Bloom's Taxonomy of Educational Objectives.[16] Higher-order competencies, which are complex to measure, relate to abstract concepts, whereas lower-order competencies focus on the achievement of a skill set. Higher-order or conceptual outcomes include, for instance:

- Analytical thinking;
- Critical thinking;
- Creative thinking;
- Expectations for a global citizen;
- Information and visual literacy;
- Lifelong learning;
- Problem solving; and
- Values (e.g., morals).

Lower-order outcomes reflect skills related, for instance, to:

- Foreign language communication;
- Oral and written communication;
- Quantitative reasoning ability; and
- Technological ability.

Neither higher- nor lower-order outcomes are mutually exclusive. For instance, information literacy might intersect with critical thinking and oral and written communication. Information literacy, however, does not fully address either critical thinking or communication skills.

Research Outcomes

This subset of student learning outcomes deals with research as a process of inquiry that, in the social sciences, consists of the following stages: reflective inquiry (problem statement, literature review, objectives, research questions, and hypotheses); procedures (research design and methodology); reliability and validity, or their qualitative counterparts; presentation of findings and discussion; study conclusion; and effective written and oral presentation. Many academic librarians lack familiarity and expertise with all of these stages and have not produced research demonstrating each stage. Faculty have the disciplinary background and experience to cover these stages. As a result, the question arises, "In which of these stages, or parts of a stage, might librarians contribute?" The answer probably centers on the literature review and writings within the discipline of interest as well as relevant cross-disciplinary work. In partnership with teaching faculty librarians might develop relevant outcomes and rubrics to measure student progress in producing sophisticated literature reviews that move from mere identification of works to a synthesis and evaluation of underlying theory and procedures useful for setting up a proposed study.

Rubrics

For any given student learning outcome, it is important to develop and apply a rubric, namely a scoring guide that translates a statement of that outcome into a set of criteria (with levels of achievement along explicit dimensions). Rubrics lay out levels of achievement for determining how much learning has occurred as measured according to perhaps a three-level framework: novice, proficient, and advanced; beginning, developing, and competent; or perhaps novice, intermediate, and distinguished.[17-18] In effect, longitudinal rubrics are useful for examining constructed responses—assessing the presentation and content, for instance, of term papers and essays in contrast to reviewing examinations containing multiple-choices questions.

Marilee J. Bresciani, Carrie L. Zelna, and James A. Anderson note that the

> Data collected from rubrics is qualitative in nature, thus allowing for the rich educational purpose of the data and for the meaningful information that will lead to the improvement of programs. However, this does not mea that one cannot assign number values to each rubric cell in order to turn qualitative information into numeric information for those constituents who respond well to numerical data.[19]

In developing longitudinal outcomes, it is important to ask two questions:

1. What should incoming students (e.g., freshman) know or be able to do?
2. What should a program graduate or someone in between an incoming student and that graduate know or be able to do?

What students should know and be able to do should not be stated as objectives (introduce, understand, or know), but rather in terms of what they can apply, demonstrate, be able to synthesize, develop, and so on, as laid out in rubrics. Librarians should be able

to guide faculty in creating their own rubrics or adapting pre-existing ones and applying them to artifacts of student learning. When the library participates in a longitudinal outcome, librarians should work with program faculty to ensure that any set of outcomes and rubrics has mutual benefits.

Methods of Assessment

Measuring the extent to which student learning outcomes are met requires the use of either direct or indirect methods for gathering quantitative or qualitative evidence. Direct methods provide actual insights into student achievement and indicate if the desired change actually occurred: there was progression from one level of achievement to another. Indirect methods require inferences or assumptions about student achievement and any change that occurred. Examples of direct methods include a review of student work contained in e-portfolios, use of a standardized test showing what students can do, responding to scenarios that require a demonstration of knowledge, or completion of a capstone course or project. An indirect method that is widely used is student completion of surveys inquiring about their perceptions.[20]

When contemplating the use of a standardized test, it is best to determine if that particular test applies to the course, program, or institutional level. Rubrics are most relevant at the course or program level, and one set of rubrics lacks universal application at the institutional level. *The Collegiate Learning Assessment*, which the Council for Aid to Education sponsors, is a performance-based examination of critical thinking, analytic reasoning, written communication, and problem solving at the institutional level. Administrated to a sample of 100 freshmen in the fall term and 100 seniors in the spring term, it shows the extent to which there is documented improvement in student achievement. Later in the spring term, institutions receive a report that "evaluates your school's value-added [improved test scores] on a comparative basis."[21] Those institutional reports that I examined summarized the overall results and made general comparisons between both groups. There was no linkage to sets of rubrics.

Service Quality and Satisfaction

Service quality probes precise statements on which the library seeks customer input. The judgment rendered is cognitive and serves as a planning tool. Satisfaction, on the other hand, focuses less on specific statements and relies more on open-ended questions. It enables service providers to gauge the temperature of customers about a specific transaction or collective encounters over time. Satisfaction judgments are affective and emotional reactions to an experience or collection of experiences. Simply stated, satisfaction is a sense of contentment that arises from the comparison of an actual experience to an expected experience.

Both service quality and satisfaction are outputs that reflect the subjective expectations of students and other library customers and that provide evaluation feedback to an organization. Both types of expectations might influence student learning outcomes. Accrediting organizations, however, do not recognize any such relationship. They are likely to associate such outputs with evaluation, not assessment, where the goal is rather to provide feedback to the library in terms of services provided. There is no widely accepted correlation to active learning.

LibQUAL+™, for instance, is a survey that reports more on service quality than satisfaction. Uses of such an instrument tend to produce low response rates that in fact do not necessarily prove representativeness to a particular population. For instance, interpretation that results represent the entire freshman class should be made with great caution. After all, a class is not a homogenous group; most likely there is racial and ethnic diversity. There are also different types of disabilities. Finally, such an instrument does not provide data that can be linked to student learning outcomes and rubrics. "In other words, the assessment findings do not tell you how your program contributes to student development and learning, and the findings seldom help you make decisions for continuous improvement of your program."[22] Still, accreditation standards might ask about student expectations, especially their satisfaction with the institution and its units and services. Before adopting any particular instrument, it is advisable to consult works such as *Measuring Customer Satisfaction and Loyalty* and *Improving Your Measurement of Customer Satisfaction*.[23]

Example

The Association of College and Research Libraries (ACRL) has produced assorted documents that address information literacy and offer both standards and competencies. Some of these documents even address specific areas or disciplines (science, technol-

ogy, anthropology, and sociology).[24] When librarians determine the extent to which students have mastered information literacy, they often bypass rubrics and apply instruments such as Project SAILS (Standardized Assessment of Information Literacy Skills), which reports results by skills sets, major, or class standing (https://www.projectsails.org/) or iSkills™, produced by the Educational Testing Service. The critical issue for use of any such instrument is how well it aligns with the rubrics that a program sets. If there is no such alignment, might a program still use the instrument to gain a baseline from which other ways of gathering evidence can be linked to the applicable rubric? It might be possible to build rubrics around the content covered by that instrument. In such an instance, however, the instrument defines what the program wants to know. An alternative is to replicate the sampling process used with the *Collegiate Learning Assessment* and view information literacy in terms of institutional assessment.

Finally, tools such as AquaBrowser® provide library customers with an interface that searches the diverse set of resources available through a library's home page. By using it, concepts such as Boolean search operators become less important and the ACRL competencies on information literacy may require some modification. As programs expect students to draw on the content of institutional repositories and other collections of visual material, information literacy may give way to (or incorporate) other types of literacy, such as visual literacy. Any student learning outcomes and associated rubrics therefore may need modification.

Conclusion

Typically, academic libraries gather and report metrics such as the number of courses for which the library offers information literacy instruction. In such instances, they focus on outputs and involvement with individual courses but not on student learning or development throughout a program of study. When librarians review citations in student papers, the focus again is on the course level. As institutions embrace outcomes assessment and look at the contribution of individual units to the accountability and quality improvement efforts of the college or university, critical questions become:

- How does the library contribute to meeting the mission of the institution?
- How effective is the library in doing so?
- What evidence does the library rely on in making that determination?
- What does the library do with that data—how does the evidence gathered support planning and program improvement?

By working with faculty at the program and institutional levels, librarians help to shape what students learn, how well they are learning it, what evidence is gathered, and how that evidence is used to improve learning. Student learning outcomes shift the attention away from teaching and the imparting of knowledge to what students learn (content, skills, abilities, attitudes, and values) and how such learning can be improved.

As the first decade of the new century nears its end, higher education is responding to the call for greater transparency and accountability. As more attention focuses on spending practices and key institutional and student outcomes, the challenge for institutions is to report critical data about themselves to prevent efforts by government to demand additional mandatory reporting. For educators, the challenge is to set educational priorities and to use any evidence gathered to improve student learning. For librarians the challenge is to engage with faculty in setting mutually-beneficial student learning outcomes and to develop and measure student progress, and to pursue opportunities such as the Council for Higher Education Accreditation (CHEA) award for "outstanding institutional progress in developing and applying evidence of student learning outcomes as part of the ongoing evaluation and improvement of college and university programs."[25] Librarians need to move beyond talking with other librarians and be involved in the broader assessment movement at the state, regional, and national level. Cecilia López concurs and emphasizes that the full potential of the contribution that librarians can make to the assessment of student learning "appears not to have been discovered." Librarians, she believes, should be present "in the membership of institutional or departmental assessment committees."[26] Further, "it is long overdue for colleges and universities to recognize that they are losing an important resource in building and strengthening their efforts to improve student learning if they do not include librarians in those groups that have responsibility for assessment efforts at their campuses."[27]

Notes

1. Ronald L. Baker, "Evaluating Quality and Effectiveness: Regional Accreditation Principles and Practices,"

The Journal of Academic Librarianship 28, nos. 1/2 (January/March 2002): 5.

2. Ibid.

3. Middle States Commission on Higher Education, *Student Learning Assessment: Options and Resources* (Philadelphia, PA: Middle States Commission on Higher Education, 2003), p. 10.

4. "Foreseeing the Future of Accreditation," *INSIDE HIGHER ED* (June 30, 2008), p. 1 (of 4). Available at http://www.insidehighered/com/news/2008/06/30/accredit (accessed June 30, 2008).

5. National Leadership Council for Liberal Education & American's Promise, *College Learning for the New Global Century* (Washington, DC: Association of American Colleges and Universities, 2007), p. 31. Available at http://www.aacu.org/leap/documents/GlobalCentury_final.pdf (accessed July 21, 2008).

6. For a formal definition of evaluation, see Joseph R. Matthews, *The Evaluation and Measurement of Library Services* (Westport, CT: Libraries Unlimited, 2007), pp. 3-6.

7. Richard P. Keeling, Andrew F. Wall, Ric Underhile, and Gwendolyn J. Dungy, *Assessment Reconsidered: Institutional Effectiveness for Student Success*. Published by International Center for Student Success and Institutional Accountability (distributed by the National Association of Student Personnel Administrators, 2008), p. 9.

8. Linda Suskie, *Assessing Student Learning: A Common Sense Guide* (Bolton, MA: Anker Publishing Co., 2004), p. 3.

9. Middle States Commission on Higher Education, *Student Learning Assessment*, p. 5.

10. "Foreseeing the Future of Accreditation," p. 2.

11. For an excellent overview of the planning process, see Peggy L. Maki, "Developing an Assessment Plan to Learn about Student Learning," in *Outcomes Assessment in Higher Education: Views and Perspectives*, edited by Peter Hernon and Robert E. Dugan (Westport, CT: Libraries Unlimited, 2004), pp. 89-101.

12. Suskie, *Assessing Student Learning*, p. 9. See Figure 1.2 on that page.

13. Ibid., pp. 8-9.

14. Minnesota State Colleges & Universities, Board of Trustees, "Accountability Dashboard" (St. Paul: Minnesota State Colleges & Universities, n.d.). Available at http://www.mnscu.edu/board/accountability/index.html (accessed September 15, 2008).

15. Peggy L. Maki, *Assessing for Learning: Building a Sustainable Commitment across the Institution* (Sterling, VA: Stylus Publishing, 2004), p. 4. For an excellent discussion about how to develop consensus and buy-in to an assessment program, see Sandra Bloomberg and Melaine McDonald, "Assessment: A Case Study in Synergy," in *Outcomes Assessment in Higher Education*, pp. 259-289.

16. See, for example, David R. Krathwohl, "A Revision of Bloom's Taxonomy: An Overview," *Theory into Practice* 41, no. 4 (November 2002): 212-218; "Bloom's Taxonomy of Educational Objectives" (Charlotte: University of North Carolina, Center for Teaching & Learning, 2007). Available at http://www.fctel.uncc.edu/pedagogy/basicscoursedevelop/Bloom.html (accessed July 21, 2008); Benjamin S. Bloom, *Taxonomy of Educational Objectives, Handbook I: The Cognitive Domain* (New York: David McKay Co., 1956). See also Richard P. Keeling, Andrew F. Wall, Ric Underhile, and Gwendolyn J. Dungy, *Assessment Reconsidered: Institutional Effectiveness for Student Success*. Published by International Center for Student Success and Institutional Accountability (distributed by the National Association of Student Personnel Administrators, 2008), pp. 25-28.

17. See Bloomberg and McDonald, "Assessment: A Case Study in Synergy;" Dannelle D. Stevens and Antonia J. Levi, *Introduction to Rubrics* (Sterling, VA: Stylus Publishing, 2005); Marilee J. Bresciani, Carrie L. Zelna, and James A. Anderson, *Assessing Student Learning: A Handbook for Practitioners* Published by International Center for Student Success and Institutional Accountability (distributed by the National Association of Student Personnel Administrators, 2004).

18. For a discussion of student buy-in for outcomes and rubrics, see Megan Oakleaf, "Dangers and Opportunities: A Conceptual Map of Information Literacy Assessment Approaches," *portal: Libraries and the Academy* 8, no. 3 (2008): 233-253.

19. Bresciani, Zelna, and Anderson, *Assessing Student* Learning, p. 37.

20. For an extensive list of direct and indirect methods, see Peter Hernon and Candy Schwartz, "Applying Student Learning Outcomes to an Educational Program," in *Revisiting Outcomes Assessment in Higher Education*, edited by Peter Hernon, Robert E. Dugan, and Candy Schwartz (Westport, CT: Libraries Unlimited, 2006), pp. 191-192. See also Kathleen Dunn, "Assessing Information Literacy Skills in the California State University: A Progress Report," *The Journal of Academic Librarianship* 28, no. 1/2 (January/March 2002): 26-35; Peter Hernon and Robert E. Dugan, *An Action Plan for Outcomes Assessment in Your Library* (Chicago: American Library Association, 2002), pp. 101-118.

21. Council for Aid to Education, "Collegiate Assessment Learning (CAL)." Available at http://www.cae.org/content/pro_collegiate.htm (accessed August 18, 2008).

22. Bresciani, Zelna, and Anderson, *Assessing Student Learning*, p. 19.

23. Bob E. Hayes, *Measuring Customer Satisfaction and Loyalty: Survey Design, Use, and Statistical Analysis Methods* (Milwaukee, WI: ASQ Quality Press, 2008); Terry G. Vavra, *Improving Your Measurement of Customer Satisfaction: Conducting, Analyzing, and Reporting Customer Satisfaction Measurement Programs* (Milwaukee, WI: ASQ Quality Press, 1997).

24. See American Library Association, Association of College and Research Libraries, "Standards and Guidelines" (Chicago: Association of College and Research Libraries). Available at http://www.ala.org/ala/acrl/acrlstandards/standardsguidelines.cfm (accessed July 21, 2008).

25. Judith Eaton, "Attending to Student Learning," *Change: The Magazine for Higher Education* (July/August 2008). Available at http://www.changemag.org/July-August%202008/abstract-attending-to-student.html (accessed August 8, 2008).

26. Cecilia López, "Assessment of Student Learning: Challenges and Strategies," *The Journal of Academic Librarianship* 28, no, 6 (November 2002): 356.

27. Ibid.