Measuring and Demonstrating Information Literacy Outcomes in a Review Process
Lisa Janicke Hinchliffe and Melissa Autumn Wong

INTRODUCTION
Of particular interest in accreditation is the quality of education provided by the institution or program. Students, parents, citizens, legislators, and other stakeholders all want assurance that students attending a given institution are learning and that the institution is assessing that learning. What students learn as a result of their college or program experience is generally referred to as outcomes, although some accreditation groups use the term student learning outcomes or learning goals. Regardless of the terminology in use, the emphasis is on measuring student achievement and understanding the impact of learning experiences. Documenting achievement of outcomes has been the focus of much of the assessment work in higher education for the past years and will likely continue as a topic of increasing importance.

In general, accreditation and program review processes emphasize outcomes assessment in the larger context of integrated planning and data-driven decision making. Integrated planning means that the institution or program has a strategic plan, educational plan, financial plan, and facilities
plan that lay out the institution’s goals and the resources necessary to achieve those goals. These plans must support the institutional mission, be cohesive, and be used to direct the budget and operations. All of this planning is aimed at creating an environment in which student learning outcomes are articulated and achieved. Assessment results and other institutional data are used to make decisions about needed program improvements and to drive future planning and resource allocations. During the review process, the institution provides evidence that it is engaging in this planning, assessment, and decision-making process. The evidence includes systematic documentation of activities, including the results of assessment, and typically includes statistics, reports, program improvement plans, and similar documents.

This chapter focuses on measuring and demonstrating information literacy outcomes in a review process. Doing so requires identifying outcomes, selecting methods to assess the outcomes, implementing a plan for ongoing collection and analysis of evidence, and analyzing the evidence to show student learning as well as a process of programmatic improvement. And, of course, the library must also deliver the programs and services that are designed to support student learning! The emphasis in this chapter will be outcomes for formal instruction programs, such as workshops, online tutorials, course-integrated instruction, and credit courses; however, the strategies can be adapted to more informal instruction situations as well. By measuring and demonstrating information literacy outcomes, you will be able to contribute to persuasive self-study documents as part of institutional review efforts as well as develop long-range plans to support future accreditation and program review needs.

**LEARNING OUTCOMES**

Learning outcomes are statements of the knowledge, skills, or attitudes students will have as a result of instruction. Well-written learning outcomes are essential because they guide the instructional design of classes, tutorials, and other instructional offerings and determine the type of evidence that needs to be gathered for assessment and eventually, accreditation and program reviews.
The most important thing to understand about learning outcomes is that they are statements about students and what they will have gained as a result of an educational experience. Statements such as “Students will learn to search ATLA Religion” or “This class covers finding commentary in ATLA Religion” are statements about course content and are not learning outcomes. In this example, an appropriate outcome would be “Students will be able to search ATLA Religion in order to locate Biblical commentary.” It may be helpful to think of outcomes as statements about the skills and knowledge students will be able to use in the future, after they have left the classroom or even after graduation.

In addition to being student-centered, learning outcomes should be specific and measurable. A well-written outcome will clearly convey the instructor’s intent to students, colleagues, and stakeholders, including accreditation review teams, and lend itself to measurement through assessment. Statements such as “Students will be able to locate resources for research papers” or “Students will be able to identify high-quality websites” are student-centered but too broad to clearly convey what students will be able to do or what criteria would be used to assess achievement. An example of a more specific outcome would be “Students will be able to use the ERIC thesaurus in order to locate controlled vocabulary,” or “Students will be able to evaluate a website for authority and timeliness in order to select high-quality sites for research.” Note that in addition to objectively measurable data (e.g., right/wrong answers on a test), librarians can use their professional judgment to determine achievement (e.g., scoring the quality of sources in a bibliography using a rubric).

There are three types of student learning outcomes. **Cognitive outcomes** state the knowledge learners should have (e.g., knowing that American National Biography contains biographies of deceased Americans); **behavioral outcomes** state the skills learners should have (e.g., the ability to use the advanced search feature to locate biographies of people in a specific profession and time period); and **affective outcomes** state the attitudes learners should have (e.g., confidence in their ability to conduct research in the library). Most information literacy instructional sessions will be designed to achieve a mix of cognitive and behavioral outcomes; affective outcomes are less common, but still appropriate for many situations.
BEWARE OF THESE POSSIBLE MISTAKES

Writing Statements about Class Content
A common mistake instructors make when writing outcomes is stating what will be done during instruction rather than what students will know, be able to do, or feel after instruction. For example, “Students will search for scholarly journals in Academic Search Premier” is a statement of what the instructor plans to do in class (i.e., an activity where students practice searching). The outcome “Students will be able to apply search limits in Academic Search Premier in order to find scholarly journal articles published within the last ten years” states a skill learners will gain and be able to use later when seeking information.

Writing Vague Outcomes
A common mistake instructors make when writing outcomes is making the outcomes too vague. For example, “Students will be able to competently search Academic Search Premier” is broad and poorly defined. What kinds of searching should they be able to do? How will we know when they have met the standard of searching “competently”? The outcome “Students will be able to apply search limits in Academic Search Premier in order to find scholarly journal articles published within the last ten years” is specific and measurable. The librarian could design an observational study of learners’ ability to search the database; in the study, he or she would specifically look for students’ ability to limit to scholarly journals and by time period.

Writing All Outcomes as Cognitive Outcomes
A common mistake instructors make when writing outcomes is phrasing something as a cognitive outcome when they actually want learners to develop a skill. For example, “Students will know to use Academic Search Premier to find scholarly journal articles” is a cognitive outcome because the learners are expected to know something; it does not stipulate that the learners can actually do something (i.e., find articles). A more appropriate outcome would be behavioral: “Students will be able to apply search limits in Academic Search Premier in order to find scholarly journal articles published within the last ten years.”

COURSE, PROGRAM, AND INSTITUTIONAL OUTCOMES
Accreditors usually expect institutions to have learning outcomes at the course, program, and institutional level. In the library, this means accreditors will be expecting to see formal, written learning outcomes for all workshops, one-shot sessions, and courses taught as well as for the department’s information literacy program as a whole. The college’s or university’s
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Institutional outcomes, those outcomes that students are expected to achieve while completing a major or earning a degree, may also reflect aspects of information literacy.

At the course level, the rule of thumb is to have three to four learning outcomes for one instructional session. If there are more than four outcomes, the instructor may be trying to cover too much. However, in the case of a very short instructional session, a tutorial, or a video, there may be only one outcome, while in the case of a credit course, the instructor might have more outcomes since there will be time to cover more content.

At the program level, there is great variability in how libraries structure their outcomes. Libraries should have a set of learning outcomes that all students should achieve as part of completing a degree and including when and how those outcomes are taught at the course level. An example of how
one might articulate these goals in a matrix format is found in table 14.1. Libraries can also structure program outcomes for students in particular degree programs, certification programs, or majors. The important thing about program outcomes is that they pull together outcomes at the course level and articulate a progression of learning while a student is enrolled at the institution.

**ASSESSMENT OF STUDENT LEARNING**

Assessment is the process by which instructors determine how well students are learning. There are many reasons students attend a class, but do not learn—misunderstandings and confusion are a normal part of the learning process; students daydream for a moment and miss a key piece of information; the class content is too advanced or moves too rapidly; or the content seems clear at the time, but students have trouble using their new knowledge or skills outside the controlled environment of the classroom.

Assessment asks questions like these:

- Did students learn what we wanted them to learn?
- If so, how well did they learn? Is their understanding very basic or more advanced? Can they use their knowledge or skills in new situations?
- If they did not learn, why not? What points were confusing? What skills were difficult to master?
- How can the instruction be changed to improve learning?

While the primary goal of assessment is to improve instruction and student learning, assessment results are also used to document that learning has occurred and that instructional offerings are having a positive effect on learners. Accreditors expect that all departments at the institution, including the library, will be engaged in a process of continuous assessment of student learning.

There are many methods for assessing student learning. Some methods will work better for small groups of students, while others will scale up to large numbers of students. Some methods will be effective for course-level outcomes, while others will be more appropriate for program- or
institutional-level outcomes. In selecting an assessment method, librarians should consider not only the students and outcome to be assessed, but also the cost and time requirements of potential assessment methods. Librarians should also consider how much faculty cooperation will be required to implement a given assessment method (e.g., gaining access to copies of student papers).

Although there are many ways to assess outcomes, the most common for information literacy instruction are these:

- **Tests/quizzes**, especially brief ones of a few questions, can be administered in a class or as part of a tutorial. Objective questions such as true/false and multiple-choice are easy to grade and scale up well to large numbers of students, while subjective questions take more time to grade, but can provide rich information about students’ knowledge and thinking processes. Tests are most appropriate for assessing cognitive (knowledge) outcomes.

- **Performance assessments** are used to measure behavioral outcomes (skills) by observing or documenting the use of a skill or by analyzing a product for evidence that the skill has been mastered. The product can be an activity assigned by the librarian, such as an in-class searching exercise, or an activity the librarian has access to, such as a term paper assigned by the classroom instructor.

- **Surveys** can be used to assess affective outcomes (attitudes and feelings) as well as student satisfaction with instruction. Care should be taken not to use surveys to assess cognitive or behavioral outcomes because students’ opinions about their knowledge or abilities are not sufficient evidence that they actually possess the knowledge or abilities, particularly at the level the instructor intended (e.g., many students think they are good at evaluating websites and would rate their skills very highly, but by more objective measures they may be just average).

### EVIDENCE

As mentioned at the beginning of the chapter, accreditors expect institutions to engage in a regular cycle of integrated planning, outcomes...
assessment, and data-driven decision making. Accreditors further expect the institution to collect evidence to document this process and to share this evidence with institutional review teams when they visit in order to verify claims made in the institutional self-study.

As with all other programs on campus, the library should systematically document its activities in order to provide accreditation review teams with the necessary evidence to support the self-study. (For obvious reasons, librarians are typically very skilled at this aspect of accreditation reviews and may even be asked to serve on committees to collect and organize evidence campus-wide!) The library should save documents related to all its assessment activities, including copies of assessment instruments, student artifacts and data files, and reports that analyze assessment data and make recommendations for future instruction.

In addition to assessment data, libraries should collect other evidence related to the planning and improvement of instructional offerings and student learning:

- **Evidence of resource allocation.** Budget statements, internal spreadsheets of budget allocations, job descriptions, and similar items can be used to show that resources are being devoted to instruction and student learning.
- **Evidence of instructional offerings.** Workshop outlines and handouts, instructor and classroom schedules, and advertisements for programs can be used to show that the library offers a variety of appropriate educational opportunities.
- **Evidence of usage.** Faculty requests for course-related instruction, workshop attendance, and usage statistics for tutorials and videos can be used to document use of instructional services and resources.
- **Evidence of planning, assessment, and improvement.** Meeting minutes, strategic plans, annual reports, analytical reports, program proposals, and similar items can be used to document the planning cycle.

Keep in mind that in addition to developing new evidence, you can identify current documents that you already create or that could be tweaked...
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to document your activities. You probably already have workshop outlines and handouts; the instructional coordinator or library director should ensure these outlines, as well as the minutes of meetings where outlines were revised, are archived on a regular basis (e.g., each semester or annually). In addition, you can look outside the library for some of the data that you need. Campus-wide surveys such as the Noel-Levitz Student Satisfaction Survey and Cooperative Institutional Research Program (CIRP) ask questions about the library and can provide valuable data about trends in usage and perception.

ONGOING COLLECTION, ANALYSIS, AND USE OF EVIDENCE IN REVIEW PROCESSES

As the library plans for accreditation or program reviews, it is important to remember that most require evidence that institutions and programs are impacting student learning through an ongoing cycle of planning, activity, assessment, and improvement. Therefore, rather than focusing your energy on a large, one-time assessment effort, you should consider how you will integrate planning and assessment efforts into the library’s regular activities. Although this ongoing activity may initially seem more difficult, it does allow you to break the work down into smaller steps or pieces that are more manageable (e.g., an assessment plan that creates a cycle for assessing instruction programs for specific populations—honors students, veterans, returning adult students, and first-generation students—over a four-year period).

Most fundamental to creating a plan for ongoing collection, analysis, and use of evidence in an accreditation or review process is identifying when and where you will conduct your assessments. For example, you may decide to administer a quiz at the end of the instructional session you do for all sections of a first-year experience course and that you will collect the search strategy worksheet that students complete in Speech 101. In addition, you will need to have clarity about the processes for doing so and the documentation you will create and save over time. As in the examples above, you may decide that individual librarians will be responsible for collecting and scoring the assessments for the sessions they teach and then
the instruction coordinator will collate and analyze all the data as part of an annual report.

Once you have identified when and where you would like to conduct your assessments, you might want to map them out on a timeline. The timeline should identify when data is collected, when it is analyzed, and when it is reported for use in decision making. It is not necessary to assess every learning outcome in every course every semester; however, it is important to establish an ongoing cycle of assessment in order to ensure that all learning outcomes are assessed during the review cycle and the data gathered is used for programmatic improvement. The exact timeline you establish will be affected by requirements outlined in the accreditation or program review standards, institutional timelines (such as periodic program reviews or strategic planning processes), and campus and library academic, fiscal, and personnel calendars. It may also be useful to annotate the timeline with indications of who is responsible for each step outlined.

Data collection is likely to involve many library employees and occur over the course of weeks or even an entire semester or year. Everyone who is involved will need to be trained on what data to collect and how to report it. Because outcomes data is information about student learning and performance, it is also sensitive data and should be stored in secured files and disposed of carefully when it is no longer needed.

Data analysis is also likely to involve many library employees. And, in fact, the first level of analysis may be conducted by an individual instructor as part of reporting the data. To identify larger trends and patterns, however, data analysis over time and across different instruction sessions will be needed. To the extent possible, the analysis process should invite anyone who reported data to engage in the analysis; however, how this is structured will likely vary by the size of the library staff and physical proximity. Data should be analyzed through the lens of the student learning outcomes and criteria for levels of performance. The goal is to identify evidence of student learning, not document library effort.

Interpreting the findings from the data analysis is the process of making judgments about the effectiveness of the library’s instructional efforts and identifying changes that should be made. Data on how the program is structured, number of sessions, qualifications of instructors, and so on will
be useful in making these interpretations and planning for programmatic improvements. For outcomes where student learning is at or above desired levels of performance, you should focus on documenting current efforts in order to sustain them. For outcomes where student learning is not at desired levels of performance, investigation and reflection are needed to determine whether the current efforts are not robust enough, instructional strategies should be modified, or there is another cause for this substandard performance. It may take some concentrated time and effort to determine the changes that should be made and to garner the needed resources to do so. In addition, if the assessment timeline does not already include assessing these outcomes, it will need to be adjusted so that the impact of the changes can be investigated.

Finally, though the most important aspect of assessing student learning is to document student achievement and make programmatic improvements, accreditation and review processes also require formal reporting. The library’s contribution to the review document may be included verbatim, or it may be used as evidence by the institution or program to make a broader statement about outcomes assessment. Regardless, though, the library’s report is likely comprised of four elements: discussion, evaluation, self-recommendations, and evidence. In the discussion section, you would clearly and succinctly summarize the library’s instruction activities. In the evaluation section, you would analyze the impact of these activities on student learning outcomes. The evaluation may conclude that students are fully, partially, minimally, or not achieving the outcomes (or some combination), depending on the findings from your data analysis. As determined by the evaluation, you would then describe what the library will do to sustain student learning successes, what the library will do to improve student outcomes, or both. Finally, in the evidence section, you would cite documents that provide proof the library is doing what it claims to be doing. The evidence should be pre-existing documents that have been generated as a result of the library’s regular activities—annual reports with a statistical analysis, budget documents, strategic plans, assessments of student learning outcomes, meeting minutes, survey results, policies, and so on. Being comprehensive and succinct in documenting the library’s activities and impact on student learning can be challenging, but by focusing on the
outcomes and data analysis, you can ensure that the report is useful in the accreditation and program review process.

**CONCLUDING ADVICE**

As a final piece of advice, you should not hesitate to start with a simple plan for assessing learning within your library. Accreditation agencies are looking for quality activities over quantity. It is better to plan one high-quality assessment activity, implement the plan, and use the results to make changes that have a positive effect on student learning than to plan a flurry of smaller activities with no long-lasting results. Beginning with a simple plan also allows staff to practice and improve their assessment skills with small-scale projects before engaging in more costly long-term assessment efforts and enables the library to gradually work assessment efforts into an ongoing cycle of planning, assessment, and improvement that is naturally integrated with regular activities.

**RECOMMENDED READINGS**

This chapter provided a foundation for getting started with assessing information literacy outcomes. For greater depth, we recommend the following resources that deal with learning outcomes and assessment.


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