

2013

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Stefanie R. Bluemle

Augustana College - Rock Island

Amanda Y. Makula

Augustana College - Rock Island

Margaret W. Rogal

Augustana College - Rock Island

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Learning by Doing: Performance Assessment of Information Literacy
across the First-Year Curriculum

Abstract

In the 2011-2012 school year, the instruction librarians at Augustana College, Illinois, changed their assessment approach in the college's required first-year sequence to focus on higher-level information literacy concepts. The librarians replaced a quantitative assessment instrument with performance assessments, which they integrated into their first-year library sessions. Although the sequence is taught by many faculty with diverse assignments, these new assessments could be applied organically across sections yet provide generalizable results. This case study describes that assessment project and its initial findings, analyzes the project's implications, and suggests how other college libraries might adopt similar qualitative assessments.

Keywords

Performance assessment, information literacy, first-year programs, collaboration

Introduction

In the 2011-2012 school year, the instruction librarians at Augustana College, Illinois, developed and administered performance assessments to evaluate students' learning and librarians' teaching of information literacy concepts in their course-integrated library sessions for the college's required first-year sequence. Moving away from a fixed-choice, quantitative information literacy test taken by students at the beginning and end of their first year, the librarians opted instead to design qualitative assessments that could be integrated into the library session and provide information about students' grasp of higher-level concepts beyond the mechanics of searching. Although the first-year sequence is taught by dozens of faculty, who use

a wide array of research assignments, we found it possible to administer performance assessments that were both organic to those assignments and comparable across sections. In this case study, we describe that assessment project, analyze its implications, and suggest how other college libraries might adopt similar qualitative assessments.

Oakleaf (2008), in an overview and analysis of the major assessment methods available to instruction librarians, observes that “the quantitative methods that once dominated assessment in higher education are slowly being replaced by qualitative forms of assessment that require students to perform real-life applications of knowledge and skills” (239). One of these qualitative forms is performance assessment, in which “an assessor . . . observes a performance or the product of a performance and judges its quality” (Silver 2003, 134). While quantitative methods, such as fixed-choice tests, measure lower-level skills in manufactured situations (Oakleaf 2008, 237), performance assessment enables educators to measure higher-level concepts as students apply them in real-life or verisimilar situations (239-240). Examples of performance assessment of information literacy include evaluating bibliographies and citations (Belanger, Bliquez, and Mondal 2012; Mery, Newby, and Peng 2012); evaluating portfolios of student work (Scharf et al. 2007; Sharma 2007; Diller and Phelps 2008); and observing and evaluating student work processes, either in person (Dunn 2002) or electronically (Halttunen and Järvelin 2005).

Another option for performance assessment is to assign students questions, tasks, or activities based on real-life information literacy scenarios. Gilchrist and Zald (2008) suggest creating worksheets that guide students through the search process and ask them to reflect on their work, or directing students to compare and contrast the roles of various source types in their projects (174). They refer to such assessments as “authentic” because of their fidelity to real-life research scenarios (174). Studies that apply questions, tasks, or activities as performance

assessments include Brown and Kingsley-Wilson (2010), who, in assessing the information literacy outcomes of a journalism class on reporting and information gathering, designed several realistic journalism scenarios, with questions about the associated research, and asked students to respond in a pre- and post-test. Johnson et al. (2011) used performance assessment as one among several assessment methods in a science-focused honors course. Belanger, Bliquez, and Mondal (2012) used in-class worksheets as one component of a multi-dimensional assessment of student learning in a writing course, comparing the worksheets to final papers to determine whether and how students applied concepts from the library visits to their research assignments.

Gilchrist and Zald (2008) stress that every form of information literacy instruction, from semester-long classes to single-session, course-integrated instruction, requires clearly articulated outcomes and an assessment plan. As this case study will address, carefully designed performance assessments can prove a valuable source of information about the more difficult, higher-level outcomes. In-class performance assessments have distinct advantages that go beyond even those of replacing quantitative with authentic qualitative assessments. For example, in-class assessments integrate assessment with learning, making the assessment organic to the students' research assignment and meaningful to the students themselves insofar as they must gather and evaluate potential sources or reflect on research processes. Moreover, in-class performance assessments are less intrusive than tests or questionnaires that amount to yet another obligation—this one imposed by the library—in college students' already over-surveyed lives.

Yet, logical questions still arise. Just how practical is it to include performance-based tasks in “one-shot” library instruction sessions? And what happens when librarians must assess information literacy outcomes across sections of the same course, in which different faculty

teach a variety of assignments? Can performance assessment yield comparable results across sections in those circumstances?

In 2006, Choinski and Emanuel found few examples in the library literature of outcomes-based assessment in single-session, or “one-shot,” information literacy instruction scenarios (149-150). Their own assessment project involved “one-minute papers,” which students wrote after class in response to questions based on ACRL information literacy outcomes (Choinski and Emanuel 2006). Byerly, Downey, and Ramin (2006) developed software to assess single-session instruction via a pre- and post-test. Other recent articles that explicitly address outcomes assessment of single-session instruction describe using fixed-choice tests or questionnaires, also outside of class (Furno and Flanagan 2008; Hsieh and Holden 2010). These studies point to the challenges of assessing outcomes in “one-shot” classes; not only is it difficult to determine the impact of a single class period, but librarians are also reluctant to include assessment within the session because of time constraints and the volume of material they must address.

Studies that address assessment of information literacy across sections of the same course either do not integrate assessment organically into classes or do so in a limited way. Although Byerly, Downey, and Ramin’s (2006) study assessed information literacy across sections of an English class and included performance-type elements, the assessment was not integrated into library sessions. Dennis, Murphey, and Rogers (2011) assessed students across sections of an academic skills class using standardized in-class “clicker” questions as well as a fixed-choice pre- and post-test. The studies that describe performance-based tasks or activities that do relate to the specific content of course-integrated instruction sessions all address assessment in one class taught by one faculty member (Brown and Kingsley-Wilson 2010; Johnson et al. 2011; Belanger, Bliquez, and Mondal 2012).

We argue in this case study that in-class performance assessment can, with careful planning, be implemented in single-session, course-integrated library instruction across sections of a course. The reward is librarians' greater ability to prioritize and assess higher-level information literacy concepts in a way that is both meaningful to the students and useful to the library.

Case Study

Augustana College, in Rock Island, Illinois, is a private, selective liberal arts college with an undergraduate student body of 2,500. All first-year Augustana students are required to complete the Liberal Studies First Year (LSFY) sequence, a series of three classes that are taught sequentially during the college's three ten-week terms. (About eighty students per year take honors sequences instead, which do not use the same skills matrix addressed in this paper.) During fall term, first-year students take LSFY101, which introduces college-level writing, speaking, and research in the context of examining the importance of a liberal education. LSFY102, the winter-term course, builds on the skills from LSFY101 as students encounter writers and thinkers of the past and develop their ability to participate in public discourse. LSFY103 focuses on diversity and change in the modern world; this spring-term course asks students to craft their own research questions, to which they respond in eight- to ten-page case-making papers.

The Augustana library has been closely involved with the Liberal Studies sequence since its inception in the 2004-2005 school year. The LSFY skills matrix, which outlines the learning outcomes for each term, includes information literacy along with reading, writing, and oral communication (see Figure 1).

Figure 1. The information literacy portion of the LSFY skills matrix, as of the 2012-2013 school year. The skills we have assessed are in boldface.

<u>LSFY101</u>	<u>LSFY102</u>	<u>LSFY103</u>
Describe how information is organized.	Identify the means of accessing print and electronic information.	Master the research tools available for information retrieval.
Distinguish among different forms of information (books, articles, newspapers and web materials).	Use bibliographical information to advance research.	Refine a research question employing advanced search strategies in subject-specific databases.
Use reference materials to select a topic and to locate reliable background information.	Determine which forms of information are appropriate for a research topic.	Gather the appropriate sources through a combination of consulting bibliographies, searching catalogs and databases, and chasing cited references.
Examine the use of indexes, databases, and bibliographies when searching for information.	Determine when interlibrary loan is appropriate and know how to use it.	Evaluate resources based on authority, bias, currency, and relevance and effectively integrate them into research.
Search for books and/or chapters/essays in books in ALiCat and I-Share.	Distinguish between primary and secondary materials and determine which kind of source is needed for a topic.	Use a citation style appropriate to the task.
Distinguish between popular and scholarly materials.	Select relevant popular and/or scholarly materials based on research needs.	
Define a research question.	Formulate a search strategy using mapping concepts and/or subject headings.	
Develop keywords for a simple search and use subject headings to expand the search.	Consider the authority, bias, currency, and relevance of all resources.	
Explain why sources must be cited and demonstrate familiarity with MLA citation style.	Format references appropriately in both in-text citations and bibliographies.	

The more than sixty faculty members who teach LSFY are expected to plan information literacy sessions with their librarian partners, designing lesson plans and assignments to address the learning outcomes. The library's instruction coordinator assigns these faculty/librarian partnerships, primarily according to the librarians' liaison responsibilities; the library's five reference and liaison librarians complete all of the information literacy instruction for LSFY, working with eight to nine sections each per term. Most sections of LSFY101 visit the library twice, dividing the students' introduction to reference materials, academic databases, and the library catalog into manageable portions. A single LSFY102 visit often addresses source

evaluation and introduces discipline-specific databases, while the LSFY103 visit prepares students for the in-depth research required for their case-making papers.

Prior to adopting performance assessment, the librarians used a fixed-choice test to evaluate student learning of information literacy in LSFY. We administered the test for several years, giving the same questions to first-year students in fall and spring terms as a pre- and post-test. As we reviewed the results each spring, however, we found that, while fixed-choice questions could tell us whether students recognized source types from citations or interpreted Boolean search queries correctly, the test provided little information about higher-level skills and processes, such as evaluating sources or developing research questions. Moreover, the test results did not help us identify substantive changes we could make to the library sessions to enhance student learning.

Other methods we attempted, on a more limited basis, include brief questionnaires for students and faculty, asking about students' self-perception of their learning and faculty's satisfaction with the library session, and "start/stop" surveys in which students recorded one research practice they would start and one they would stop as a result of the session. These methods proved similarly inconclusive, in this case because both were indirect forms of assessment; that is, they recorded what students believed about their learning or predicted about their future research habits, rather than directly evaluating their facility with a skill.

In fall 2011, the librarians formed a sub-committee to develop a new means of assessment that would focus on higher-level skills from the matrix and help all the instruction librarians hone their information literacy sessions for LSFY. We also wanted the new assessment method to be as organic as possible to the class assignment, so that librarians could incorporate assessment into the session in a way that was useful to the students, rather than imposing an

additional obligation as the fixed-choice test had done. The sub-committee's challenge was to design a method that would meet the above criteria yet be usable with the varied assignments created by our diverse group of LSFY faculty.

Inspired by Oakleaf (2008), who promotes performance assessment as well-suited to measuring higher-level, real-life skills, the sub-committee designed in-class performance assessments, consisting of focused questions in worksheet form, that we targeted to specific higher-level learning outcomes from the LSFY information literacy skills matrix. We created such activities for each term of the sequence, focusing on skills that included exploring the reference collection, differentiating popular and scholarly publications, and developing a research question. However, the remainder of this case study will focus in detail on the winter-term LSFY102 assessment of students' source-evaluation skills as a representative example.

Because a single in-class activity cannot assess all the learning outcomes for a given term, our first step was to select a higher-level outcome from the LSFY skills matrix to assess in each course in the sequence. This process led us to rank and prioritize the outcomes, coming to a collective decision about which skills we valued most. For LSFY102 we selected the outcome, "determine which forms of information are appropriate for a research topic." This choice, with its emphasis on evaluating sources within the context of particular research needs, did not just represent a life-long skill. It also presupposed some other winter-term skills from the matrix, such as formulating search strategies, and had the potential to encompass others still, such as selecting relevant popular and scholarly material. In short, the outcome we chose was both transferable to real-life situations and cumulative in terms of the information literacy skills taught in LSFY thus far.

The next step was to design a performance-based activity to assess the chosen outcome. To meet the librarians' needs, the activity had to be doable for students in a seventy-five-minute class period and usable, in an essentially unaltered form, with a variety of class assignments. The activity we designed was titled simply, "Source Evaluation Activity," and it consisted of a brief set of instructions, along with space to answer the questions on a one-sided worksheet (Figure 2).

Figure 2. The source evaluation activity.

Your name: _____ Date: _____

LSFY102 professor: _____

Source Evaluation Activity

Based on the criteria we established as a class, find one source that you think would be appropriate for your project. Attach a copy of the first page of the source to this sheet, and answer the questions below.

What is your topic?

Write a citation below for the source you chose. At a minimum, include the author and title of the source and, if applicable, the publication it came from.

Write 3-5 sentences explaining why this source is appropriate for your project. Refer to the criteria we established as a class at the beginning of the class period.

****Remember to attach a copy of the first page of the source!**

This worksheet deliberately permitted a small degree of flexibility. For example, a librarian could re-word Question 1 for classes that were framing their topics as questions (e.g., “What question are you pursuing?”), or conducting background research at the exploratory stage (e.g., “What topic are you exploring right now?”). Question 2 could require a correct MLA or other formal citation if the faculty member had emphasized citation styles in class, or remain as-is for classes that had yet to review citations. Thus, librarians could make limited changes, in response to faculty and student needs, without altering the activity’s fundamental intent, which was to assess students’ ability to select and justify a “good” source for a particular research need.

The most important feature of the activity was that it applied generically to a large variety of assignments and research scenarios. Many LSFY102 faculty assign either one or two formal, four- to six-page papers that require a small amount of research (one to four sources). The activity worked well for such assignments, with their contained, focused research requirements, but it could also apply to oral presentations, multimedia assignments, or even to projects that limited students’ library research to background work in print or electronic reference material. Moreover, the activity could encompass a wide variety of source types; thus far, Augustana librarians have used it with classes that were looking for everything from print encyclopedia articles to play reviews in popular media to scholarly research articles. Finally, the activity combined mechanics, such as selecting keywords or using limiters in databases, with higher-level evaluation skills, such as reviewing a source efficiently to identify its primary focus and broad argument. This broad applicability of the assessment activity, along with the ubiquity—in college as well as “real life”—of students’ need to identify high-quality information in order to answer questions, made it well-suited to our wish to teach and assess transferable, life-long skills.

To administer the assessment, each librarian identified at least one faculty member to approach about doing the activity in class. Because of the importance of source evaluation, as well as the activity's broad applicability and utility for the students—to whom the librarians returned the worksheets after making photocopies—it was not difficult to identify faculty who would be willing to incorporate it into their library sessions. The librarians were free to teach the concept in whichever way they chose, with one requirement: the session must include a discussion of what qualities a source would have that would make it “good” for the students’ assignment. Those qualities became the criteria by which each librarian would assess the students’ sources and written justifications. After twenty to thirty minutes working with the class as a group, the librarian gave the students time to work independently on the activity. Some faculty wished students to complete it by the end of the library session, while others asked them to turn it in during a later class period, in which case the librarian and faculty reached an agreement about how the librarian would obtain the completed worksheets for review. Faculty also varied in the credit they attached to the activity: some assigned points, some graded it as pass/fail, and others did not assign any credit.

The apparent challenge of the assessment activity, as designed and applied across diverse assignments with varied research requirements, was how to compare results at the end of the term. The librarians established criteria based on each class’s unique needs, but how could these diverse criteria be synthesized into a cohesive picture of first-year students’ ability to evaluate sources? First, we created the greatest possible consistency in the way librarians reported their results. Each librarian began by carefully recording the source criteria for each class in which she used the activity. Then, the librarian completed a chart (Figure 3) indicating which criteria each student’s source met.

Figure 3. Source evaluation chart. The librarians created such a chart for each class with which they did the activity.

	Wksht 1	Wksht 2	Wksht 3	Wksht 4	Wksht 5	Wksht 6	Wksht 7	Etc.
Criterion 1	x	x	x					
Criterion 2	x	x	x					
Criterion 3			x					
Criterion 4	x		x					

Finally, she prepared a written report about the class: the students' assignment; how she taught the material; anecdotal information about student responses; and a subjective evaluation of the worksheets, including the strengths and weaknesses of students' sources and written justifications, and how these might relate to the librarian's experience of the class as a whole. We posted these charts and reports in an online folder shared among the instruction librarians.

In our meeting at the end of the term, we addressed three main questions: 1) What did we learn about first-year students' ability to evaluate sources? What are their strengths and challenges with respect to this skill? 2) Based on what we have learned, how would we teach this skill differently in the future? and 3) Based on what we have learned, how would we administer the assessment differently in the future? In discussing the first question, we analyzed the criteria from our various classes in order to identify logical points of comparison. For example, below are two lists of criteria for two different classes, taught by different faculty and librarians:

Class 1 Source Criteria

- peer-reviewed
- current [as defined by the faculty member]
- research article on a topic relevant to class theme

Class 2 Source Criteria

- peer-reviewed
- current [as defined by the faculty member]
- found in a library database
- provides either scholarly context or

- presents an argument to which students can respond, with evidence from primary sources, in the remainder of the paper
- biographical information for the figure being researched

The two groups' research needs were clearly different. The students in Class 1 were practicing how to enter a scholarly conversation, while the students in Class 2 needed sources for background and contextualization. Yet, the two research scenarios share certain elements of source evaluation that we could compare between the classes: distinguishing between popular and scholarly material, establishing currency, and identifying relevant topics and arguments. Similarly, the research article requirement in Class 1 might be comparable to a magazine article requirement in a third class, as both would relate to distinguishing source types (e.g., research vs. review articles; and popular magazines vs. trade publications).

Having completed this comparison of criteria, we were able to address the central question: Augustana first-years' ability, by winter term, to evaluate sources effectively. Our discussion revealed that students are generally adept at the mechanical elements of research, such as using peer-review and date limiters, and even searching library databases for sources that are "on-topic." They are more likely to struggle with finer distinctions, however, including grey areas between source types (for example, students often mistook review articles for research articles, because both are peer-reviewed). Their greatest difficulty, however, was with evaluating arguments efficiently. Particularly with scholarly humanities articles, which do not have the structure of scientific research articles, students needed help reading abstracts and identifying arguments in order to discriminate among their "on-topic" sources and select those best suited to their needs.

This discovery led us to change our approach to teaching source evaluation. While we still address database mechanics, we recognize that, by winter term, students are more likely to need a review than a reintroduction to skills like constructing a search or applying limiters. Instead, we are more likely to examine an array, or even just a pair, of sample sources in class, discussing the cues that signal source types or ways of making a judicious choice for the class assignment. Pairing such an activity with a database demonstration—considering both how the database can help make a selection and what its limits are—makes the review of search mechanics more meaningful for students. As of the 2012-2013 school year we are continuing to develop new teaching methods, particularly for reading abstracts and evaluating humanities articles. We hope our continued application of the source evaluation assessment activity, in the context of our initial discoveries, will facilitate this endeavor.

The final step in each assessment discussion among the librarians was to consider how we would administer the assessment differently in the future. The first time we used the source evaluation activity, for example, we debated the necessity of assigning credit and the relative merits of having the worksheet due at the end of class versus a later class period. After several terms' experience with a variety of performance assessment worksheets, we have concluded that the assessments work best—and the librarian is guaranteed to see the worksheets—if they are concise enough for students to complete them in class. At this point we have not reached a firm conclusion about the effect of credit on the quality of students' responses, and assignment of credit still depends on the faculty member.

As we considered productive changes to the assessment activities, we acknowledged the method's limitations. Reliability is the greatest challenge. In assessing any given LSFY learning outcome, each of the librarians administers identical, or nearly identical, worksheets. However,

the flexibility of our method—i.e., working with course-integrated sessions involving diverse faculty and assignments—makes it difficult to establish a single, common rubric or even, at times, to ask a different librarian to evaluate a set of worksheets, because the criteria for the final product arise from each librarian's unique collaboration with her partner faculty. We created our charts, written reports, and questions for group discussion with this difficulty in mind, in an attempt to achieve the greatest possible commonality under the circumstances.

The method also limits our assessment of student learning to the time immediately after we teach the concept in class. It does not measure long-term retention or the ways in which students' understanding is reflected in their final projects. For these reasons, our method of performance assessment combines well with other modes of assessment. To evaluate first-years' information literacy skills, the library has quantitative data from past years, and may obtain additional such data in future years, from our prior mode of assessment, the fixed-choice pre- and post-test. We have administered that test to graduating seniors, as well, to measure growth over the college experience. The library also has a satisfaction survey as well as college senior survey data to assess student perceptions. And we are considering other means of assessing LSFY and other instruction, including better post-class questionnaires, and, possibly, reading LSFY103 research papers. In this context, the informal, subjective nature of our performance assessment method is an asset to the Augustana library, as it provides a unique analytical perspective in a spectrum of assessment options.

Implications

Case studies inevitably raise the question of their broader implications. In this instance, how, and for what reasons, might this method of performance assessment be applied at other institutions?

We designed our method to qualitatively assess higher-level information literacy concepts across diverse sections of a required course. Because each assessment activity addresses a single learning outcome, one key to applying the method is to identify a set of classes at the same level that use the same information literacy outcomes. The required-course scenario is ideal, whether it be required for all students or for those in a particular field of study.

Augustana's small size and team-oriented library culture made it easy for the assessment sub-committee to enlist all five of the LSFY instruction librarians in the performance assessment project. If each librarian uses the assessment with one section of LSFY each term, we have data for about 100 of our nearly 700 first-year students; if some or all librarians use the assessment with more than one section, as is often the case, we can acquire data for as many as 200 students. However, while a small student population and a collegial work atmosphere clearly make the assessment method easier to apply, we believe it can also be relevant to both larger schools and environments where some instruction librarians may be reluctant to place their work under such scrutiny. Even if a sub-set of like-minded librarians—two to five, perhaps, from a larger cohort—agrees to apply the same outcomes-focused activity informally across sections of a class, that small group can build trust and collegiality, learn from one another and their students, and develop new teaching methods collaboratively.

At Augustana, most LSFY instruction sessions are 75 minutes long, though we teach sessions ranging from 50 to 110 minutes in length. When librarians teach briefer sessions of one hour or less, it is often best to ask participating faculty to assign the worksheet as a take-home activity, which the partner librarian then reads before the sheets are returned to students for them to consult as they complete their projects.

Enlisting faculty to participate is perhaps the greatest challenge, particularly in campus environments where assessment is an unpopular topic. Promoting the activities as learning tools is a first step, and is part of the reason why the assessments should be designed to work organically in a variety of scenarios. Faculty who give priority to student learning will often appreciate an activity that provides real benefit to students as well as the librarians. We have also found it helpful to frame our proposals to faculty carefully, even avoiding the term “assessment” in some circumstances. Teachers who use the products of their students’ work—final papers and exams—to evaluate student learning and improve their classes in future semesters can readily appreciate librarians’ frustration at never seeing the results of their own teaching. Framing the project as an effort to learn more about student work and collaborate with colleagues to develop better lesson plans can be quite effective with faculty, especially if the performance assessment project is more an informal means to improve teaching than a component of a formal assessment report.

The benefits of implementing common performance assessments across sections of a course ultimately outweigh the challenges. First, even after an initial, perhaps very small, number of faculty have participated in a pilot assessment, librarians will be able to use their findings to facilitate discussions with additional faculty about student learning. Having evidence of what students learn easily and where they face challenges helps librarians make a case for prioritizing certain skills in class, particularly with faculty who continue to favor types of library instruction that librarians find unproductive. In some cases, librarians might work with faculty to design new or improve existing assignments to give students better practice with the skills that challenge them. For example, one Augustana librarian and her faculty partner restructured an assignment from a traditional multi-source paper into a series of “source analyses,” brief essays

reflecting on the value and relevance of the sources students had uncovered. Finally, having the assessment activities to suggest to faculty in advance of their library sessions can help bring consistency to students' library experiences, particularly when librarians are teaching information literacy for a required class that has many sections taught by diverse faculty, whose preferences for the library visit might otherwise result in students' having a too-diverse range of instruction sessions. If several sections all complete the same assessment activity, that is one step toward greater consistency.

Librarians will see other benefits, as well, beyond improved work with faculty. Any single in-class activity of the kind we advocate in this paper can address only one higher-level learning outcome, such as evaluating sources effectively or focusing a research question. The assessment project, therefore, provides an incentive to librarians to prioritize learning outcomes, making decisions about what skills they value most, and, through the assessment process, identifying the areas in which students require the greatest and least amounts of assistance from the library. This process of discrimination helps determine how librarians can give focus to the limited amount of time they have with students. In some respects, the evaluation and synthesis involved in prioritizing learning outcomes resemble the analytical work we hope students will do as they research, pulling diverse sources together into a single, cohesive argument. Librarians might choose to take seemingly different skills, such as navigating the catalog and distinguishing between popular and scholarly sources, and identify the similarity within the difference. In this example, perhaps it is the experience both tasks provide of encountering a variety of available resources and thinking about how different source types should be used differently. Could that similarity evolve into one class's central learning outcome, such as, "compare and contrast the purposes of academic vs. popular books and periodical articles"?

Ultimately, the most important goal of the assessment method introduced in this paper is for librarians to describe and understand, to the best of their ability, college students' experience with the information literacy outcomes the profession values. The process of analyzing and synthesizing concepts brings us closer to students on an empathic level, but its greatest benefit, in the long run, is the ability to identify what students learn most easily and what challenges them most significantly; knowing this and acting upon it makes librarians (and all educators) better teachers. Head and Eisenberg (2010) of Project Information Literacy found, in their recent study of college students' research practices in the digital age, that students can obtain abundant information on most topics of study, and that they struggle less with how to locate sources than with the burden of information overload. In the survey, students reported that beginning a research project was most difficult, followed by selecting topics, narrowing topics, and sorting through search results to identify the best sources in a large range of options (25). From the perspective of a teaching librarian, these challenges are noteworthy because they have little to do with common library instruction topics, such as brainstorming keywords, employing catalog and database limiters, or distinguishing one citation style from another. Instead students are grappling with weightier, more abstract problems: How can I define a research question and narrow it to a manageable scope? Among an array of research options, what should I do first, second, and third? How can I discriminate among the many sources I have found in order to decide which are best?

Behind all of these questions is the specter of the digital age and the seemingly unlimited knowledge it offers. This is not to say that students do not need training in how to identify library resources and search them effectively; that in itself gives students a narrower range of better research options. But that training still does not address the larger questions of defining a scope,

knowing where and how to begin, and evaluating the sources found—because most academic libraries, too, can overwhelm students with options—to select those best for the occasion.

Similarly, quantitative assessment methods, such as multiple-choice tests, may reveal whether students can identify the “best” research question among several options; they cannot, however, determine whether students can craft such questions on their own, and they cannot identify the stumbling blocks students encounter along the way.

Performance assessment, by definition, allows educators to assess higher-level outcomes in real-life situations. Employing common performance assessments across sections of a class permits librarians to assess these outcomes with a larger body of students; that new information, in turn, can drive needed changes in the way librarians teach information literacy. The first attempts may need to be minimal, as both librarians and faculty consider how to adopt a new approach. As librarians gather more and more evidence about what higher-level information literacy concepts students most need to learn, they can begin using that evidence to argue for improvement. In some cases, that improvement may simply mean re-framing one- or two-shot sessions by contextualizing the mechanics of library research within a larger discussion of higher-level skills (for example, introducing subject limiters as not just a search tool but also a way to help narrow a broad topic or identify a line of questioning within a broader area of study). In other cases, an already-scaffolded information literacy program might gradually evolve to be more and more focused on higher-level concepts. Either way, performance assessment can be an important means to help librarians who teach within a course-integrated model achieve what they value: an instruction program that embraces the complexity of research and gives students help where they need it most.

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