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Library Value in the Classroom: Assessing Student Learning Outcomes from Instruction and Collections

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ABSTRACT

What is the value of library services and resources in the college classroom? How do library instruction and collections contribute to academic teaching and learning outcomes? A chemistry instructor, instruction librarian, and technical services librarian collaborated to answer these questions by combining chemistry education and information literacy pedagogy to assess student learning. The authors developed curriculum units that teach information literacy skills and scientific literature research in a General Chemistry Laboratory course for Honors students. Their study extends beyond examining library instruction and collections assessment in isolation. Rather, their research protocol intends to contribute to student learning outcomes assessment research. The authors propose that an embedded, mixed-methodology, and longitudinal approach can be used to collect data and assess outcomes in terms that describe and measure the value of library services and resources.

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INTRODUCTION

The institutional goal of research universities should be a balanced system in which each scholar – faculty member or student – learns in a campus environment that nurtures exploration and creativity on the part of every member (Boyer Commission on Educating Undergraduates in the Research University, 1998, p. 10).

This story began with a simple email and lead to an interdisciplinary study conducted over three academic years. At the University of Colorado (CU) Denver, in the summer of 2010, a technical services librarian contacted a chemistry instructor and asked: “In the current economic climate, when university administrators are looking for ways to balance the budget, it is imperative that libraries provide evidence of value and demonstrate their contribution to university priorities. Are you available to discuss your potential participation in a study?” By fall term, the survey participant became a co-researcher and with the help of an instruction librarian, the library was embedded into two chemistry classes. Together the three like-minded faculty members from different areas of academia and librarianship collaborated to produce curriculum units for Honors students in General Chemistry Laboratory I and II

courses, administered over fall and spring semesters. The authors exposed first-year students to scientific literature and assigned information literacy activities that help build problem-solving and critical thinking skills to engage and promote student success. Moreover, they developed and implemented a research protocol that enabled them to gather and analyze data on student learning outcomes over time.

At the conclusion of a three-year study, the three faculty members asked themselves three questions: Can we generalize this methodology? Will it scale? Does it contribute to the organizational goals of student retention and success? Their answer was, “we believe so.” This article is an invitation to practicing librarians and Library and Information Science researchers to implement the CU Denver research protocol for gathering and analyzing data to measure the value of library services and resources. In this article, the authors will explain how their article contributes to the growing body of literature focused on student learning outcomes assessment; describe their research protocol and curriculum units; and provide a summary of study results. Companion articles address the case study methodology, implementation, and student performance assessments (Ferrer-Vinent, Bruehl, Pan, & Jones, submitted for publication); and describe the curriculum units developed and their connection to building information literacy (Bruehl, Pan, & Ferrer-Vinent, submitted for publication).

STUDENT LEARNING OUTCOMES ASSESSMENT

Like a rally call to the troops, the Association of College and Research Libraries (ACRL) and Megan Oakleaf created *The value of academic*

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libraries: *A comprehensive research review and report* (2010). In essence, the report encourages campus level conversation on assessment, accountability, and value. Within the context of institutional mission and outcomes, they identify “Student Success” as one of the top ten areas of library value on which to focus a research agenda. In response to the question – “How does the library contribute to student learning?” – Oakleaf states that the current literature on information literacy is “voluminous,” but a majority is “sporadic, disconnected, and reveals limited snapshots of the impact of academic libraries on learning.” Instead, she recommends that “Academic librarians require systematic, coherent, and connected evidence to establish the role of libraries in student learning” (ACRL, 2010, p. 118). In her review and analysis of the literature, Oakleaf introduces several practical suggestions (p. 37–42). The authors distill these concepts into three words that describe the essence of their foray into student learning outcomes assessment: collaboration, purposefulness, and longevity.

COLLABORATION

Comprehensive and meaningful assessment of student success is impossible in isolation. A learning ecosystem can be cultivated between student and instructor; student and librarian; and instructor and librarian. Poetically described by the Boyer Commission report, *Reinventing undergraduate education*, “The ecology of the university depends on a deep and abiding understanding that inquiry, investigation, and discovery are the heart of the enterprise, whether in funded research projects or in undergraduate classrooms or graduate apprenticeships. Everyone at a university should be a discoverer, a learner” (Boyer Commission on Educating Undergraduates in the Research University, 1998, p. 9). Throughout library literature, these sentiments have been echoed for more than a decade.

When evaluating the 21st century library, Smith (2001) describes the changing environment of higher education. The concept of learning has shifted from the “teacher’s knowledge to the student’s understanding and capabilities...it requires the faculty to bring the strength of the research paradigm into the learning process” (2001, p. 29). Academic faculty members are being asked to become learning experts by focusing on outcomes assessment – developing individual students’ competencies and demonstrating collective programmatic success. As part of the academic community, the mission of the library must change from “a content view (books, subject knowledge) to a competency view (what students will be able to do)” (p. 32). No longer gatekeepers to materials or tools, academic librarians must take a more active role in the learning process and contribute student learning outcomes for academic programs across the curriculum.

Similarly, Nimon recognizes the expanded role of librarians in measuring the outcomes of academic programs. To do so, she encourages developing partnerships between the library and academic departments to teach information literacy. Moreover, the success is contingent on including assessment criteria that reflect the goals of all stakeholders – librarian, academics, and students. She explains, “Student evaluation of the program must be appropriately tailored to show whether its goals were readily visible to the learners and whether the learners considered them met...It will be necessary for the assessment of student work to be at least in part a joint responsibility” (Nimon, 2001, p. 50).

Participation in pedagogy and assessment activities is not just the role of academic librarians, but their obligation. Bundy asserts that they “can no longer responsibly disengage from why students want the print and digital information and resources to which libraries can now so readily provide access. Nor can they disengage from whether those students have the capacity to apply that information well, and to what use they put it” (2004, p. 2). Instead, both academic teachers and librarians should be immersed in the total educational process – including program and curriculum development, learning design, pedagogies, assessment, and the scholarship of teaching and learning.

Information literacy is an important concept that should be owned by all educators (Bundy, 2004, p. 7). However, this terminology may not be recognizable outside the library walls. Some examples of synonyms and overlapping concepts that may resonate more widely include the following: information, research, or 21st century skills; independent scholarship or research; lifelong learning; scientific method; research processes; and Bloom’s taxonomy. As Oakleaf explains, “For those facing greater challenges, establishing and using a common language that emphasizes shared campuswide values may produce greater success” (2011, p. 65).

In his model for academic libraries, Lewis (2007) proposes a strategy for maintaining the central library position on campus in the digital age. One of his top five strategies is to “Reposition library and information tools, resources, and expertise so it is embedded into the teaching, learning, and research enterprise...Emphasis should be placed on external, not library-centered, structures and systems” (2007, p. 3). By focusing on student learning, academic libraries and librarians have new opportunities to reestablish their place on campus, engage with their colleagues, and maximize their contribution to their institutions and higher education as a whole.

PURPOSEFULNESS

When developing student learning outcomes assessments, academic librarians, and faculty members should proceed with purpose. In other words, they are intentionally gathering and analyzing particular types of data. Specifically, Dugan & Herson (2002) assert, “student learning outcomes are concerned with attributes and abilities, both cognitive and affective, which reflect how the student experiences at the institution supported their development as individuals” (2002, p. 377). In addition, “outcomes assessment alerts us to what students know or do not know about research,” Carter explains, “thus allowing librarians to adapt instruction to the needs of the students” (2002, p. 41). This requires a commitment to document, evaluate, and communicate impacts on student learning, as well as improving one’s own teaching and assessment skills (Oakleaf, 2011, p. 70).

The literature on information literacy assessment identifies numerous techniques and tools. These tactics require a range of resources or experiences and assess various perspectives. Radcliff et al. describe three different learning domains: *affective* assesses how students feel or their opinions; *behavioral* evaluates what students can do; and *cognitive* measures what students know. They classify performance assessments, such as report writing, as part of the behavioral domain (2007, p. 19–20, 115). In contrast Oakleaf describes performance assessments as “real-life applications of knowledge and skills” and “[they] reinforce the concept that what students learn in class should be usable outside the classroom” (2008, p. 239). All can agree that assignments with an information literacy component can be used to measure higher-order thinking skills, and to achieve greater integration and contextualization in an academic course. While the results can offer a high degree of validity, they may have limited generalizability (Radcliff, Jensen, Salem, Burhanna, & Gedeon, 2007, p. 115–17; Oakleaf, 2008, p. 242–244).

The literature on assessment of information literacy is quite bountiful – well documented in monographs, handbooks, manuals, guides, and articles. The focus is nearly exclusively on library instruction, and overlooks other areas of librarianship. Library collections are included in the broader context of library assessment and emphasize cost effectiveness (Hufford, 2013, p. 20–26). Kinman’s article “E-metrics and library assessment in action” is a rare example that highlights the significant role electronic resources play in demonstrating the value of libraries and impacting on student learning outcomes (2009). There is ample opportunity to expand this area of the scholarship into a new line of inquiry that captures the complexity of the learning environment and inspires more rigorous and critical investigation.

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