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Developing a Practical Framework for Information Literacy Program Evaluation

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Abstract.

Purpose. The Purdue University Libraries, like many academic libraries, face increased expectations for demonstrating their value and impact. This has not only led to an expectation of the increased use of metrics to demonstrate impact, but also a more fundamental imperative that libraries more clearly articulate their contributions to educational and research outcomes of their campus communities (value). At Purdue, the Provost implemented a new program review process in July 2015, while the Libraries were simultaneously going through the process of developing a new mission statement for its information literacy program. This statement was developed through a broad collaborative process within the libraries and with external campus stakeholders. These two developments led the Libraries to launch a project to advance an outcomes-based, mission-centric framework for evaluating its information literacy programming that can be sustained over time. The project to develop this framework was predicated on being able to answer the following question, derived from the program mission statement: “Does the Purdue University Libraries’ information literacy programming empower diverse learners to use information to learn in transformative ways; lead to the discovery of new knowledge; and foster academic, personal and professional success?” This question not only needs to be answered, but

needs to be answered on an ongoing basis to communicate the programming impact to external stakeholders. To be effective, sustainable, and practical, it also needs to be uncomplicated and integrated into regular workflows.

Methods. The methods for developing this framework consists of four steps: 1) focus groups with librarians to collaborate on gaining a more comprehensive understanding of existing assessment practices, as well as their perceptions of challenges and opportunities in assessing information literacy programs, 2) analysis of focus group findings, characterizing current assessment practices and identifying where outcomes-based assessment is already occurring, 3) a gap analysis, comparing focus group findings to the information literacy mission statement, and 4) development of recommendations with measures/indicators to address gaps and develop a comprehensive framework for program evaluation. This paper reports on the first three steps, concluding with suggestions for further development of the evolving framework.

Findings. The assessment practices identified in the analysis of the focus group discussions suggested that librarians assessed how students critically used information to learn more than the other dimensions of the Purdue Libraries' information literacy mission statement: research-based programming, empowerment of diverse learners, enabling the creation of new knowledge, and fostering academic, personal, and professional success. The findings suggest next steps in the development of the framework, including: 1) developing guidelines for collecting assessment data gathered by librarians for use in programmatic assessment, 2) determining assessment strategies for the Libraries and allocate resources, and 3) providing professional development and incentives for librarians to create assessment strategies related to all aspects the mission statement.

Practical Implications/Value. We expect that the results of this project will contribute to the body of knowledge in library assessment by presenting a framework for the outcomes-based evaluation of information literacy program evaluation that is based on a strategic perspective on the program, but that also builds upon existing practices and capacity within the organization.

Introduction.

The Purdue University Libraries, like many academic libraries, face increased expectations for demonstrating their value and impact. Because of external drivers related to value, the campus, and thus the Libraries, focus on the undergraduate learning experience and demonstrating the value of these efforts. This imperative is leading the Libraries to more clearly articulate their contributions to campus educational and research outcomes, transform their approach to making these contributions, and use evidence to demonstrate impact to stakeholders. Using an approach that recognizes the importance of instructional and research engagement in the broader context of the campus community, the Purdue Libraries moved from ad hoc approaches to instruction to increasing integration into the formalized structures of instruction on campus. This reflects a move away from “one-shot” instruction to deeper engagement in courses and curricula and systematic involvement in campus curricular transformation. At the same time, articulation of the Libraries’ instructional program has become increasingly structured. This resulted in the development of a new Information Literacy Mission Statement, intended to better articulate the goals and potential impact of Libraries instruction to the campus:

“Purdue University Libraries' research-based information literacy programming empowers Purdue's diverse communities of learners to use information critically to learn and to create new knowledge, fostering academic, personal, and professional success.”
(<https://www.lib.purdue.edu/infolit/mission>)

Although aligned with the Libraries’ strategic plan, information literacy programming was largely a bottom-up process of building structure around existing, successful practices that were the outgrowth of a focus on engagement and partnerships. This led to an ad hoc approach to information literacy assessment, inconsistently carried out at the individual student level with little programmatic evaluation beyond the requirements of external reporting such as ARL statistics. It was clear that improving program evaluation and assessment would be necessary to continue to develop and improve the Libraries’ information literacy efforts. At the same time, the Provost implemented a new program review process. These developments led the Libraries to launch a project to develop an outcomes-based, mission-centric framework for evaluating its information literacy programming that can be sustained over time. The project to develop this framework was predicated on this question, derived from the program mission statement: “Does the Purdue University Libraries’ information literacy programming empower diverse learners to use information to learn in transformative ways; lead to the discovery of new knowledge; and foster academic, personal and professional success?”

This question needed to be answered for two reasons: 1) so that the Libraries would continuously evaluate and communicate their effectiveness and programmatic impact to external stakeholders; and 2) so that the Libraries faculty and staff could improve their practices through evidence. A framework approach was chosen so the practices could be coordinated from the top down to meet organizational needs while still honoring existing practices and providing space for innovation and customized practice. To use a music metaphor, we were not attempting to compose a symphony but were rather trying to develop jazz charts – a structure that coordinates the ensemble but still showcases creativity and spontaneity. The intention of the project was to develop and implement a framework for programmatic evaluation that met the internal and external evaluation needs of the organization as a whole. At the same time, it allowed individual

practitioners to develop innovations that could be piloted and eventually integrated into the larger framework, or simply used to improve individual practice.

Literature Review.

Academic libraries have a long history of collecting data for assessment. Input data such as gate counts and circulation statistics sufficed for reporting purposes in the past. But there is widespread acknowledgement that input data do not capture the breadth or depth of how libraries influence students and faculty. Librarians, individual libraries, and professional associations are developing new assessment strategies, but there is no agreement on a method or model for assessing academic libraries. Koltay postulated that “impact assessment is a field in its infancy for research libraries” (2010, p. 11). Professional associations have programs to support libraries in their efforts. The Association of Research Libraries “Statistics and Assessment” program (<http://www.arl.org/focus-areas/statistics-assessment#.V4PIKaJa1WA>); the American Library Association “Libraries Matter: Impact Research (<http://www.ala.org/research/librariesmatter/>); the Association of College and Research Libraries “VALUE of Academic Libraries” initiative (<http://www.acrl.ala.org/value/>); and much of the focus of SLA (<https://www.sla.org/career-center/helping-organizations-succeed/>; <http://www.sla.org/wp-content/uploads/2014/03/FT-SLA-Report.pdf>) reflect this. Demonstrating impact should be communicated to constituencies, but a study of members of the Association of Research Libraries found that few reported assessment data on their websites (Lewin and Passonneau 2012, 91-92).

Accountability to the institutional administration is one purpose of programmatic assessment. But there are other benefits to assessment, such as program improvement and the development of teaching theory (Lewin and Passonneau 2012, p. 91; Oakleaf, 2010 p. 27; Beile, 2007 p. 135-6). Individual librarians assess information literacy and student learning at the individual or class level. However, only a few libraries addressed the information literacy *program* as the unit of measure or evaluates the impact of the information literacy program in the literature. The institutional mission should be the foundation for library assessment (ACRL, 2012; Weiner, et al., 2009; Oakleaf 30; Stewart 2011, 270; Saunders 2007; Gratch-Lindauer 1998, 2002). According to ACRL, a mission statement and assessment that includes program performance are best practices for information literacy programs. Program evaluation should include measurement of the progress of meeting the program’s goals and objectives; and assessment of integration with course, curriculum, institutional, and accreditation assessment (ACRL 2012). “Without this broader perspective, we may create projects and services that are excellent on their own yet disconnected from a more comprehensive approach... Assessing a library’s information literacy efforts on a programmatic scale provides a pivotal opportunity to ensure that those engaged in information literacy instruction, as well as library and university administrators, are best positioned to support the myriad elements that make up a successful information literacy program” (Van Cleave, p. 415).

One program incorporated the ACRL “Characteristics of Best Practices of Information Literacy Programs” in a survey of librarians to assess their information literacy program (Van Cleave, p. 415). Gewirtz described an evaluation that included peer-to-peer feedback, student feedback, and self-reflection (p. 20-23). The evaluation at Cornell’s Mann Library included an attitudinal assessment that considered user satisfaction; an outcomes-based assessment of a sample of first-year students; and a gap assessment that examined the difference between the perceptions of the importance of workshop content by the instructors and the students (Tancheva

p. 49-50). The University of Central Florida based its evaluation on its alignment with the institution's mission (Beile, 2007 p. 135-6). Goebel et al (2007) reported on the assessment practices for twenty-one discipline-specific information literacy courses at Augustana, considering that a program assessment. Few of the citations in Brown and Niles (2013) bibliography on information literacy assessment, which covered the period from 2007 to 2012, or Hufford's (2013) review of academic library assessment, which covered 2005-2011, included articles on program-level assessment.

Program evaluation is a method of assessment that focuses on the effectiveness of an overall program. Typically, the evaluation employs more than one method and is based on the anticipated outcomes of the program. It is well-suited for academic libraries as the goal of program evaluation is to improve the program (Patton 2002, p. 148).

There is a need for a general framework for information literacy program evaluation that considers three factors: 1) the library's need for assessment for reporting and improvement purposes, 2) drivers for assessment that are external to the library, and 3) the assessment that already occurs by those teaching information literacy in the library.

The Model

Based on the review of the literature and knowledge of our local drivers, the project team developed a preliminary model (Figure 1) for developing a coherent approach to the evaluation of instructional activities. It is a general framework for identifying and articulating assessment needs which takes into account drivers, often interrelated, at organizational levels (unit and university goals) and individual levels (learner outcomes, instructor outcomes). Therefore, the model began with the two boxes on the outside. "Instructor/Learning Individual Outcomes" represents the learning outcomes of learners and the professional development needs of librarians and faculty related to teaching. This is an acknowledgement that assessment is intended to improve the outcomes and practices of individuals. "Administrative Goals," at the top, represents the strategic and operational goals set by the library as an organization and the university as a whole. These are connected by arrows to indicate the interrelationships between administrative and individual goals. For example, administrative goals to improve graduation rates may influence the development of learning outcomes in the curriculum. Conversely, student performance on specific learning outcomes may shape administrative goals at the unit or campus level.



Figure 1. Proposed Framework for Information Literacy Programming Assessment.

The model then proposes using a mission-based framework for both classifying existing assessment practices and identifying areas of opportunity and need. The model rests upon two assumptions: 1) that a library's mission, and by extension that of its instruction program, reflect the aspirations and current practices of the library in relation to the larger mission of the institution, and 2) that goals at the institutional level are aligned with the institutional mission. Furthermore, these goals are instantiated at two levels—organizational and individual outcomes. Therefore, assessment programs that are based on the mission of the library or its instructional program should support assessment of the library's contributions to institutional mission at multiple levels. The proposed model is a framework for a coordinated assessment program that allows for individual innovation while providing a structured approach to evaluating activities and outcomes according to the intent of the library and broader institution.

The research questions were: What is a model for the evaluation of information literacy programming that integrates existing information literacy assessment practices and external drivers for accountability? Could the model provide an effective framework for evaluating information literacy programs? Project members sought to evaluate the model using the Purdue Libraries as a case study for testing, before developing recommendations for further development locally and further evaluation at other institutions.

Methods.

The methods for developing this framework consisted of four steps: 1) focus groups with librarians to collaborate on gaining a more comprehensive understanding of existing assessment practices, as well as their perceptions of challenges and opportunities in assessing information literacy programs, 2) analysis of focus group findings, characterizing current assessment

practices and identifying where outcomes-based assessment is already occurring, 3) a gap analysis, comparing focus group findings to the information literacy mission statement, and 4) development of recommendations with measures/indicators to address gaps and develop a comprehensive framework for program evaluation. This is because “a variety of approaches are necessary to assess the degree to which institutions achieve student learning (Oakleaf 2010, p. 39). Because the framework would address more than input measures, it would need to include qualitative studies: “The more a program moves beyond training in standard basic competencies to more individualized development, the more qualitative case studies will be needed to capture the range of outcomes attained” (Patton 2002, p. 138). This paper reports on the first three steps, concluding with suggestions for further development of the evolving framework.

Organizational issues that might have occurred were prevented by: 1) emphasizing that the project was to examine information literacy assessment at a program level, and was not assessing individual librarians or students; and 2) involving librarians through focus groups and requesting feedback on the framework and recommendations. “The crucial distinction between aggregate outcomes assessment of a group effort and individual instructor evaluation must be made clear to all involved parties from the outset, as the lack of such can prove problematic to both the investment of instructional librarians and the involvement of teaching faculty. It cannot be overemphasized that information literacy instruction outcomes assessment is not about measuring the effectiveness of either individual library or course instruction or instructors; it is, rather, an incremental cycle focused upon continuous improvement with the emphasis always upon cumulative student learning” (Stowe, 2013, p. 244).

Focus Groups.

The investigators conducted nine focus groups with 3-4 people in each, including all members of the Libraries faculty who agreed to participate. There were a total of 22 participants. Each focus group was scheduled for 1.5 hours. The same investigator asked questions during each focus group and another investigator took notes on the discussions. They asked:

1. In teaching and learning situations, how do you know that people are learning what you intend them to learn?
2. Have you worked with faculty, staff, or teaching assistants in other departments to integrate the use of information into their instruction?
3. How do you evaluate the outcomes of those efforts?
4. What do you think would be the ideal way for you to evaluate whether people are learning what you want them to learn?
5. What would help you to develop this type of evaluation?

Analysis of Focus Group Findings and Gap Analysis.

One investigator coded the notes from the focus groups to identify areas in which assessment occurred and what the respondents felt was missing in their assessments. The findings from the analysis of the focus group discussions were compared to the key aspects of the Libraries’ information literacy mission statement: research-based programming,

empowerment of diverse learners, enabling the critical use of information to learn, enabling the creation of new knowledge, and fostering academic, personal, and professional success.

Findings.

Current Assessment Practices.

The Libraries faculty who participated in the focus groups collectively described thirteen activities through which they fostered learning:

1. Online content, (e.g., webpages, guides, etc.)
2. Student outreach (e.g., orientations, etc.)
3. Faculty outreach
4. Labs
5. Students consultations
6. Online tutorials
7. Workshops
8. Class visits (i.e., one-shots)
9. Graduate Assistant mentoring
10. Independent study
11. Embedded
12. Faculty Consultations (i.e., to integrate IL into coursework)
13. Semester-long course

The participants described eleven different methods for determining if learning resulted from their teaching efforts. Table 1 shows how the participants described whether they were meeting their teaching intentions. One way was input from the course instructor with whom they worked. Another was signs of engagement of the learners. Last was learner performance, such as classroom interactions, tests, and final projects.

Table 1: Evidence Used to Evaluate Teaching and Learning Efforts

Instructor Input	Learner Engagement	Learner Performance
<ul style="list-style-type: none"> • Instructor feedback (on class visits) • Use in courses • Invitations 	<ul style="list-style-type: none"> • Number of learners reached • Usage of materials • Follow ups • Feedback 	<ul style="list-style-type: none"> • Classroom interaction (monitoring classroom discussion to gauge comprehension) • Learning activities • Assessment artifacts (e.g., projects, papers, etc.) • Future actions (e.g., successful conference submissions)

The participants discussed five learning activities that they evaluated based on feedback from course instructors or facilitators of an activity or by learner engagement: 1) providing online content, 2) outreach efforts for students, 3) outreach efforts for faculty, 4) working with a student lab, and 5) student consultations.

In contrast to activities that were evaluated using input from the instructor and student engagement, determining the success of online tutorials, workshops, and class visits (one-shots) also involved evaluating student performance. In two of the focus groups, participants discussed a project in which students received online badges for completing a mandatory online information literacy tutorial. Participants in four of the focus groups described workshops. Participants in four of the focus groups identified ways of determining the success of workshops: invitations to do the workshop again; feedback collected from attendees; monitoring interaction during the workshop; and examining work that attendees completed.

Participants in all nine of the focus groups participated in class visits, (“one-shots,”) the mainstay of the instructional efforts, and described eight assessment activities. These included invitations to conduct additional sessions; getting feedback from the course instructor; use of online materials; surveys; student follow-up; student questions; and evaluating student work, such as class projects.

When the participants had autonomy over the evaluation, their assessment practices included examining learner engagement and performance, but did not include gathering input from another instructor. These instructional activities included mentoring of student workers; overseeing independent studies; embedding in a course; consulting to integrate information literacy into a course; and teaching a semester-long course. The participants in one focus group described mentoring graduate students hired by the Libraries. They assessed this through performance of workplace tasks and scholarly output, such as journal articles and grants related to the student’s library work. Similarly, one participant described overseeing a student’s independent study and evaluating learning by the student’s ability to perform in future endeavors.

One participant discussed embedding in a course in which he attended most or all of the class sessions and worked with students as they completed projects. The participant reviewed all of the student work and informally advised the instructor on the quality of student use of information and other aspects of the work. Participants in six of focus groups discussed working with faculty, lecturers, or teaching assistants to integrate information literacy or other educational ideas into their teaching. The assessment practices included counting the number of students reached through the course; instructor feedback; and performance (i.e., gauging instructor understanding of the concepts introduced and tracking how the instructor applied what they learned).

Participants in six of the focus groups also discussed assessment practices when teaching or co-teaching semester-long courses. They included student feedback and follow up, learning activities, and student work. In contrast to class visits in which student work tended to be in-class exercises or homework assignments, assessment in semester-long courses spanned a range of work that included final projects, papers, and examinations.

Ideal Assessment Practices.

Participants identified assessment practices they would use in an ideal situation to evaluate learning and what support they would need to implement such practices: 1) experimental, 2) pre-post, and 3) longitudinal designs. One participant intended to analyze papers from an advanced course to compare the work of students who had taken an information literacy course with those who hadn’t. Another suggested having students take a pre- and post-

test at intervals to determine the effectiveness of particular interventions and growth across a curriculum.

Libraries faculty in five of the focus groups identified longitudinal assessment efforts as ideal for showing long-term impacts. Some suggested using a tool to track student achievement unobtrusively after information literacy instruction or posing questions in exit polls or alumni surveys. One described using institutional data to assess the impact of her instruction on student achievement. The participants identified the development of standardized processes as needed support for assessment.

Participants emphasized access to student work and feedback as necessary for implementing preferred assessment strategies. One focus group identified time in the classroom as key and suggested that this requires subject expertise. They thought that partnerships with individual faculty or departments to develop assessment was ideal and suggested the need for support to encourage these. One participant suggested the need for department-level assessment in which faculty define their goals for students' research skills and determine if students are meeting their goals.

Four of the focus groups mentioned needing time and staff support to implement assessment strategies such as statistical analysis.

Gap Analysis.

Librarians at Purdue are engaged in teaching and learning activities related to the different aspects of the Libraries' mission statement: research-based programming, empowerment of diverse learners, enabling the critical use of information to learn, enabling the creation of new knowledge, and fostering academic, personal, and professional success. However, the assessment practices identified in the analysis of the focus group discussions suggest that librarians are assessing some aspects of information literacy much more than others. Most of the discussion in the focus groups' centered on assessing how students are able to critically use information to learn.

Although only a couple of the librarians described conducting research to inform information literacy efforts, the authors are anecdotally aware of additional information literacy research projects that were not discussed in the focus groups. This suggests that the librarians may not view these activities in relationship to their assessment practices. There was no suggestion in the focus groups that librarians teach or create assessments related specifically to empowering diverse learners. The references to teaching and consulting activities which emphasized the creation of new knowledge were primarily focused on data management and scholarly communication. Often occurring outside of curricular efforts, assessment efforts typically focus more on indicators such as learner feedback, rather than learner performance.

Librarians were very concerned with assessing how the Libraries' information literacy efforts enable learners to successfully use information in future academic, personal and professional settings. However, they are engaged in few assessment practices related to this aspect of the mission statement. Librarians' suggestions for collecting data to assess the impact of the Libraries' information literacy efforts on learners' future endeavors were tied to existing university efforts to explore alumni views of their undergraduate experiences at Purdue.

Further Development of the Framework for Program Evaluation.

In the initial phase, the findings from the focus groups suggest elements to focus on to further develop the assessment framework. The findings highlight the need for the librarians at Purdue to expand their assessment practices to include aspects of the information literacy mission beyond critically using information to learn. Librarians need to directly relate their information literacy research efforts to their teaching and assessment practices. They also need to assess their efforts related to empowering diverse learners. Pursuant to these goals, the Libraries recently hired a faculty member with responsibilities for enabling librarians to reach diverse groups within the university, as well as guide librarians in assessing these efforts. Librarians also need professional development to help them to identify and develop assessment strategies for their work related to enabling the creation of new knowledge, and fostering academic, personal and professional success.

In addition to considering assessment data collected by librarians for use in programmatic assessment, the findings from the focus groups suggest the need for larger-scale assessment efforts to be undertaken by the Libraries, such as gathering alumni data to explore the value of the information literacy efforts they engaged in while at Purdue. Next steps in the development of the framework focus on:

- developing guidelines for collecting assessment data gathered by librarians for use in programmatic assessment,
- determining assessment strategies that may be undertaken collectively by the Libraries and allocate resources, and
- providing professional development and incentives for librarians to create assessment strategies related to all aspects of Purdue Libraries' information literacy mission.

Conclusion.

Assessment needs to be customized so that it is “appropriate for their instructional programs and their institutional environment, meshing their efforts with local assessment practices and expectations” (Ragains and Zauha, 2009, p. 68). However, institutions need to compare with those who are peers or aspirational. The framework developed for this project meets both of those criteria: customizable and comparable.

This assessment included important components that Oakleaf outlined:

- “articulate the purposes of assessment,
- reveal the theoretical underpinnings of assessment efforts,
- list information literacy goal and outcome and align them with other institutional documents,
- describe the assessment methods and tools used to gather evidence of learning,
- capture and report assessment results, and

- emphasize the improvements made to teaching, learning, and future assessments” (Oakleaf 2009, p. 88).

The approach described in this paper is one that can meet these multiple needs as it is developed further. It provides a structure for considering assessments, at multiple levels. At the organizational level, it provides a structure for developing assessments that evaluate the performance of libraries on their strategic goals. Meanwhile, at an individual level, it provides flexibility for individuals to engage in innovation, both in assessment and instruction, within the larger organizational context.

We expect that the results of this project will contribute to the body of knowledge in library assessment by presenting a framework for the outcomes-based evaluation of information literacy program evaluation that is based on a strategic perspective on the program, but that also builds upon existing practices and capacity within the organization.

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Appendix 1. Email Participant Recruitment Message.

This is the message emailed to Purdue Libraries faculty:

“Dear Libraries Faculty,

In response to the Provost’s request that campus units report indicators of achievement and growth, Paul Bracke, Sharon Weiner, and I are developing an evaluation of our Information Literacy programming. The purpose of the evaluation is to determine programmatic effectiveness and identify areas in which we could improve. Information Literacy programming includes all aspects of IL supported through the Libraries, including data literacy and copyright.

We are starting by gathering baseline information. We invite each of you to participate in focus groups of 3-4 people each. The purpose of the focus groups is to learn how you determine whether your students have learned what you wanted them to learn. **We are not gathering information to assess Faculty or students individually.** We intend to aggregate the data we collect to get a broad view of information literacy assessment done through the Purdue Libraries. We will schedule 1.5 hours for each focus group. Please let me know by [date] whether you are willing to participate in this important exercise.

Thank you in advance for your help in this important work!

Dr. Clarence Maybee

Information Literacy Specialist, Assistant Professor”