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Article

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Abstract

Objective – This study aimed to identify assessment opportunities and stakeholder connections in an emerging technologies department. Such departments are often overlooked by traditional assessment measures because they do not appear to provide direct support for student learning.

Methods – The study consisted of a content analysis of departmental records and of weekly activity journals which were completed by staff in the Emerging Technologies and Services department in a U.S. academic library. The findings were supported by interviews with team members to provide richer data. An evidence based framework was used to identify stakeholder interactions where impactful evidence might be gathered to support decision-making and to communicate value.

Results – The study identified a lack of available assessable evidence with some types of interaction, outreach activity, and responsibilities of staff being under-reported in departmental

documentation. A modified logic model was developed to further identify assessment opportunities and reporting processes.

Conclusion – The authors conclude that an evidence based practice research approach offers an engaging and illuminative framework to identify department alignment to strategic initiatives and learning goals. In order to provide a more complete picture of library impact and value, new and robust methods of assessing library technology departments must be developed and employed.

Introduction

Demonstrating value and impact is an ongoing and evolving challenge for academic libraries. Often value is determined by the impact library services and resources have with stakeholders and one of the prominent populations served by academic libraries is students. University administrators who determine library budgets and set organizational goals place importance on how academic libraries meet student needs, contribute to student learning, and advance institutional strategic teaching efforts. Thus, identifying the points where a library's resources and services intersect with students provides potential opportunities to insert assessment measures that will aid in articulating library value to stakeholders such as students and university administrators. This article is about identifying assessment opportunities and stakeholder connections using an evidence based research framework.

Academic libraries offer many obvious intersections with students and other stakeholders through their services points such as at the reference or circulation desk, or through instruction and workshops that deal directly with students and patrons. Assessing the impact of departments engaged in library instruction, reference, and circulation is relatively well established. Potential assessment of these areas can occur using transactional metrics provided through circulation, reference, and attendance statistics. Additional value can be determined by follow-up surveys, evaluating student work, or connecting these transaction statistics to institutional data such as grade-

point-average or retention rates. However, academic libraries have units such as cataloguing, technology departments, digitization units, and others that may not have direct contact with students and patrons. This lack of direct contact with stakeholders does not excuse these library departments from library assessment efforts as libraries devote significant human, financial, and technology resources to these areas and need to articulate a return on these investments.

An essential contributor to library value is found within library systems, web services, and emerging technologies departments. Often these areas of library services are overlooked by traditional assessment measures and efforts because they do not appear to provide direct support for student learning. This is unfortunate, as technology units are a "crucial" contributor to service organizations that deal primarily in information, such as libraries (Braun, 1998, p. 64). Library technology departments offer important services and expertise that certainly influence student learning, researcher productivity, and library innovation but documenting this impact remains an ongoing challenge. In order to provide a more complete picture of library impact and value, new and robust methods of assessing library technology departments must be developed and employed. However, care should be taken to ensure that these library assessments be thoughtfully and effectively integrated within existing workflows and structures. Libraries are encouraged to take the time for a thorough self-examination before embarking on an assessment project. This

reflection is necessary in order to assist in identifying the potential uses of the data, as well as to build a sustainable assessment cycle.

The Emerging Technologies & Services (ETS) department at Oregon State University Libraries & Press (OSULP) provides an example of this departmental self-examination. In the fall of 2012, ETS engaged in a qualitative research project to identify stakeholder intersections with ETS activities and services. The primary intended outcome from this study was to determine stakeholder intersection points from which ETS could insert future assessment measures to articulate value and impact. This research project was inspired and guided by the Evidence Based Library and Information practices outlined by Booth (2009) and Koufogiannakis (2011). This study consisted of a content analysis of departmental reports and weekly activity journals of ETS members. These items were analyzed for interactions with stakeholders such as students, faculty, and library professionals. An additional evaluation criterion was applied by examining how departmental reports and activity journals contributed to the advancement of the *OSULP Strategic Plan*, and alignment to national library standards as these both serve to outline library value and impact.

From these results ETS was able to draw informed inferences about the department's role in student learning, advancement of the *OSULP Strategic Plan*, and alignment to national library standards. This data was further enhanced by interviews with team members that provided greater detail, leading to the discovery of under-realized connections between the library technology department and its stakeholders. The outcomes of this research project for ETS included a series of next steps to better capture evidence to convey impact, and a stronger commitment to assessment efforts within the library. Interestingly, the assessment activities highlighted areas in which the department was taking on a leadership role that had not been identified previously. The outcomes renewed

the department's focus on outreach beyond OSULP. From a library assessment perspective, this project yielded a greater understanding of the potential all library departments have to contribute to student learning, library and university prestige, as well as providing meaningful value to library stakeholders.

Emerging Technologies and Services

The ETS department at OSULP encompasses more than maintaining the computing and technology infrastructure for the library. The vision of the ETS department is to: *Pioneer efforts that transform access to content and collections. Forge partnerships to expand current services and explore new frontiers of library technology.* This vision is translated by the ETS department into innovative undertakings such as contribution to larger open-source projects like Hydra; a community driven, Digital Asset Management Solution (DAMS), translating OSULP press books into dynamic educational mobile sites, transforming library spaces with student-centered technology, an in-house developed study room reservation system, a friend-finder tool to aid study groups, and collaborating with government and non-government entities on the Oregon Explorer data portal. These innovative projects are reminiscent of the stance some library administrators take that libraries have "an obligation to drive technological change" (Bengtson & Bunnett, 2012, p. 702). This is the stance embraced by ETS at OSULP.

ETS bridges both the management and the creation of the technology environment within the OSULP library, or as Braun (1998) describes it as "technology in context." Braun points out, "Whereas the application, creation, design, maintenance, and improvement of technology itself are, of the domain of the engineer and scientist, managing technology in the context, and for the benefit, of a firm, is the domain of the technology manager" (p. 5). ETS is made up of equal parts of each side of Braun's technology dynamic of technology managers and designers. At the time of this research study, the unit

included two tenure track librarians who performed research about technology application, instruction, and use; two professional faculty, one of whom acted in the role of overall “technology manager”; six staff including programmers developing new applications and software; and various student workers.

ETS is a very productive and dynamic department that allows the library to remain innovative and relevant to users. After collections and staffing costs, technology is the largest expenditure line in the library. If you exclude salaries, technology costs are the library's largest expenditure after collections. Such a significant resource allocation makes clear that OSULP sees value in the work and resources ETS provides not only to the library but also its users. Despite the apparent value the library places on this department, ETS remained challenged to convey its impact in a meaningful way to campus stakeholders, such as university administrators, who place an emphasis on assessing student learning and success in the classroom. The most common way libraries articulate their contribution to student learning is through their instruction program and workshops. ETS has not traditionally participated in teaching and instruction activities. However, that is not to say that ETS does not interact with students, contribute to student learning, or offer education opportunities to students. In fact, a recent report (Grajek, 2014) identified “improving student outcomes” through “strategically leveraging technology” as a top ten issue for educational technologists. With this need to strategically leverage technology to improve student outcomes in mind, an environmental scan was undertaken to determine how ETS's accomplishments might contribute, whether directly or indirectly, to student learning, university priorities, and national standards.

The EBLIP Cycle as a Research Framework

Library assessment is interested in evidence that can convey impact. This research project is tasked with identifying stakeholder interactions where impactful evidence might be gathered to inform decisions and communicate value. One framework that supports evidence based processes is found within the literature of evidence based librarianship (EBL). Crumley and Koufogiannakis (2002) frame evidence based librarians as “a means to improve the profession of librarianship by asking questions as well as finding, critically appraising, and incorporating research evidence from library science (and other disciplines) into daily practice. It also involves encouraging librarians to conduct high quality qualitative and quantitative research” (p. 62). Eldredge (2000) suggested EBL is “an *applied* rather than theoretical science. EBL merges scientific research with pressing needs to solve practical problems.... EBL provides a framework for self-correction as new information becomes available that suggests new directions or methods” (p. 290). The nature of EBL as being applied, practical, and informing daily practice, suggestive of new directions, and new evidence resonated with the authors as a framework to construct the ETS assessment project.

Recently EBL practices and models have become more inclusive of answering day-to-day library management questions not simply targeted research projects. Booth (2009) points out that “(i)t is simplistic to assume that a complex managerial situation will yield a single question as in the classic (evidence based practice) formulating or framing a question” (p. 342). Indeed, our project demonstrates the need to take a wider more iterative and reflective approach to understanding the problem to be addressed. Booth (2009) concurs as “a management problem may be more effectively tackled by achieving a wider, more holistic perspective. Within the context of team working

and collaboration it is extremely valuable for a team to arrive at a shared understanding of the problem to articulate this collectively” (Booth, 2009, p. 342). This is the very outcome ETS and the Assessment Librarian sought in uncovering the assessment possibilities within the ETS department. As Booth notes, “Each team member has a contribution to make, which itself needs to be valued and carried forward within the decision-making process (p. 342). Booth notes further, “(g)iven that library services are human mediated, a significant contributor to the success of any service change is the motivation, involvement, and commitment of the team (p. 343). The more collaborative EBL model as Booth proposes thus provides an appropriate framework to evaluate the assessment opportunities within ETS. This newer model is made up five steps (Booth 2009).

- Articulate: Articulating the problem
- Assemble: Assembling the evidence base
- Assess: Assessing the evidence
- Agree: Agreeing on the actions
- Adapt: Adapting the implementation

This model is what guided the process to determine the assessment potential and capability of the ETS department at OSULP. This framework was further enhanced by the set of questions Koufogiannakis (2011) provides regarding gathering practiced based evidence in libraries.

This EBL framework not only provides a pathway to begin to gather evidence of assessment and impact, it also provides a tool to help identify the places and types of evidence that may need to be gathered in a more deliberate or strategic manner. This elegantly mirrored our project goals: determine what library assessment evidence and opportunities are already being leveraged as well as where gaps may exist that might be filled in with additional research effort or assessment tools.

ARTICULATE: Articulating the Problem

The overarching question driving this research study was:

- What types of interactions does ETS have with stakeholders and students?

Answering this question would help ETS identify opportunities to target assessment interventions that strategically gather evidence to convey impact to stakeholders. This broad research question was refined further into three more specific questions to help better understand the ETS department’s impact and contribution to library and university outcomes valued by stakeholders.

- Where/How is ETS impacting student learning?
- Where/How is ETS advancing the library’s Strategic Plan?
- Where/How is ETS contributing to meeting national library standards?

ASSEMBLE: Assembling the Evidence Base

Once the research questions were articulated, the next step in the EBL framework was to gather available evidence about the ETS department’s actual and potential contributions to the libraries, the university, and to the national assessment guidelines. The process was guided by the evidence gathering questions suggested by Koufogiannakis (2011): *What do I already know?; What local evidence is available?; What does the literature say?; and What other information do I need to gather? What do I already know?*

The ETS department was well integrated into the 2012 - 2017 OSULP Strategic Plan (Oregon State University Libraries and Press, n.d.). There were a large number of strategic activities within the plan that were spearheaded directly by ETS. These items have been identified in internal documents and progress was reported through quarterly library reports. These reports captured

the traditional criteria of departmental accomplishments, projects, personnel issues, and challenges. Beyond these reports, there was little in the way of formal assessment activities such as user feedback surveys, return on investment projects, or other evidence gathering procedures to tie ETS efforts to library and campus-wide outcomes. Most projects were documented as “completed” or “in-progress” on reports but were lacking in their ability to articulate project impacts on student success, faculty productivity, or university advancement.

Based on departmental reports and quick scan of known activities, ETS offers many opportunities for student interaction. This occurs through direct interactions with student ETS employees and the hosting of student internships. Students are also recruited by ETS to test new technologies through usability testing. Interactions also occur with users when troubleshooting access issues to library resources. ETS also has indirect user interactions through the development and maintenance of the technology students interact with, as well as through the acquisition and support of the educational technologies that underpin the library’s instruction efforts. Consultations also transpire with constituents such as library staff, university departments and faculty, and stakeholders outside OSULP. However, despite knowing about these interactions, details of the frequency, quality, and assessability of these interactions were unclear. Thus, ETS continued to have trouble translating these interactions into impacts within the currently available and accepted assessment reporting structure and was therefore not accurately conveying the department’s overall contribution to library and student success.

What Local Evidence is Available?

OSULP gathers local evidence from user feedback tools like LibQual+, occasional surveys of patrons on technology use, as well as statistics gathered on library equipment in public/teaching areas. This data provides ETS

with indirect evidence of contribution to library value. However, these measures are not comprehensive in nature, and fail to articulate the full array of interactions ETS has with stakeholders. Further potential evidence of ETS’s impact is articulated in library departmental reports but these documents often provide a summary of activities not a full scope of data for additional analysis. In summary, local evidence available to demonstrate ETS’s impact was limited and highlights the need for additional assessment practices in this area.

What Does the Literature Say?

The body of literature concerning library assessment of student learning, space evaluation, and collection usage is growing at healthy rate. Unfortunately, one area that needs some additional development is capturing the contribution to assessment efforts from under-represented library units such as ETS. Little (2013) points out, “Academic libraries, especially those with research missions and relatively large budgets, have also not paid as much attention as might be desired to the assessment and evaluation of library technologies...” and the accompanying infrastructure and services (p. 596). Most studies found that the library literature focused on evaluating specific technologies rather than the overall services and impact library technology departments might provide. Such is the case with Dougherty (2009) who suggests that strategically evaluating library information technology is an even more critical need as a result of recent economic troubles. Dougherty suggests “measuring performance,” examining usage statistics, and soliciting constituent feedback as a few strategies to consider when thinking about managing technology costs. Ergood, Neu, Strudwick, Burkule, and Boxen. (2012) echo Dougherty’s concerns: “In adapting to the many changes facing us today, the development of an effective strategy for identifying and evaluating emerging technologies is vital” (p. 122). Despite these recommendations by Dougherty (2009), Ergood et al. (2012), and Little (2013) to examine,

evaluate, and assess emerging technologies and library technology units; the library literature is lacking in research to aid in such projects. Ergood et al. (2012) found the same research gap noting: "While the professional literature covers emerging technologies and social media in libraries pretty well, there is a gap in coverage of specific planning and staffing approaches to such technologies, whether in libraries or elsewhere" (p.124). This lack of literature also extends to works addressing overall library technology units such as ETS.

A review of the academic literature revealed a few broad themes associated with technology units in organizations and value assessment. In general, the library literature focused on the technology tools themselves, not the assessment of departmental impact. For example, Little (2013) writes about using Google Analytics and the usefulness of usability studies as a way to assess how useful the technology is. Dash and Padhi (2010) write about the various library assessment tools available and how they assess library technologies, but again, ignore the department supporting those tools. The information technology literature is focused in much the same way, with an emphasis on IT infrastructure, purchasing, and the importance of customer service but little about broader outcomes such as organizational success and external stakeholder impact.

Though not specifically about libraries or library technology, the area of technology assessment offers some research of general interest. For example, Braun (1998) provides a well thought-out examination of technology assessment in the broader sense concerning the potential impacts on society, government, and businesses. Braun defines technology assessment as "a systematic attempt to foresee the consequences of introducing a particular technology in all spheres it is likely to interact" (p. 28). This definition provides some guidance to the assessment of library technology departments in suggesting that all spheres of interaction with

their services be considered including student learning or other stakeholder impacts.

Examining the business literature for articles about assessing organizational unit value and contribution to external stakeholder value also yielded limited results. In fact some research suggests, that in addition to ignoring assessment measures altogether, focusing too heavily on certain performance measurements for assessment can be detrimental to an organization's measures of impact and effectiveness (Meyer & Gupta, 1994). For example, Meyer and Gupta talk of a process called "perverse learning" wherein individuals learn which metrics are emphasized by administrators and only put efforts into those activities that are being measured and ignore those activities that are not. Such "perverse learning" can damage the accuracy of performance measures as well as create disconnect between an organization's purpose and the actions it actually emphasizes (pp.339-340). This speaks to the need to revisit performance measures periodically, align them to organizational goals, and refresh or develop new metrics as needed. In the case of OSULP, the need was apparent to balance evidence gathering across the organization not simply the areas that were traditionally leveraged to gather stakeholder impact such as student learning via library instruction or through student computer usage statistics in library learning commons.

Little (2013) reminds us that, "Assessment should be built in to everything thing we do, including our technology programs, planning, and services" (p.597). Nguyen and Frazee (2009) emphasize that strategic technology planning is required within higher education to avoid haphazard implementation of tools and resources. Braun (1998) in talking about the wider assessment of technology in society, the environment, and within organizations suggests that the "purpose of technology assessment is to look beyond the immediately obvious and analyze the ramifications of given technology in as wide-ranging and far-sighted manner as

possible" (p. 1). In assessing library technology units, one must look beyond the "immediately obvious" criteria of cost and use, and expand the analysis to more "wide-ranging and far-sighted" impacts such as student learning and stakeholder value. These "wide-ranging and far-sighted" impacts are often articulated in a library's strategic plan or mission and suggest criteria for library technology units to consider assessing value. Cervone (2010) concurs "when evaluating emerging technologies or innovative new practices and services, it is critical to ensure that the path your library is going down is in sync with the mission of the parent institution" (p. 240). How library technology departments align their efforts and services to advance the library's strategic plan or mission is one avenue to examine value and determine criteria for assessment. Within information technology literature, this congruence of technology efforts and organizational goals is known as "alignment" or "fit" (Bergeron, Raymond, & Rivard, 2004). Such alignment theories posit that organizations "... whose strategy and structure are aligned should be less vulnerable to external change and internal inefficiencies and should thus perform better" (p. 1004).

Similarly, as within the relationship of technology assessment and strategic management, Braun (1998) points out: "The firm needs strategic management for long-term survival and prosperity. Technology is vital to the life of the firm and is one of the most important tools available for taking up a certain strategic stance. Thus technology needs specialist strategic management. Strategic management of technology requires an information input in the form of technology assessment" (p. 55). Such assessments are essential to determine the strategic fit of technology units within libraries as they represent potential areas of tension within the overall organization. As units like ETS are often synonymous with innovation and experimentation, Cervone (2010) points out that, "Innovation without demonstrable value being added to processes or services is not something

that is typically valued by an organization's leadership" (p. 240). Ergood et al. (2012) agree with regards to emerging technologies that, "Given the strong culture of assessment in libraries, an integral last step is to consider the metrics to be used in determining the effectiveness of the tools our libraries implement" (p. 125). The examination of the "effectiveness" of these tools on the student learning valued by library stakeholders and articulated in library strategic plans is what framed the research questions used to guide this study. This study attempts to examine the strategic alignment of the ETS department at OSU Libraries, as a first step in building more meaningful assessments that will assist in articulating value and measuring performance. These assessments will further align the ETS department within OSULP library's overall strategic plan that emphasizes student success.

What Other Information Do I Need to Gather?

As part of the process, the researchers reviewed ETS departmental quarterly reports and noted a scarcity of detailed assessment and impact evidence being reported. Additionally, there was an absence of assessment processes built into departmental projects. Combining these two factors with a lack of literature evaluating library technology departments, it was determined that there was a real research need to examine the assessment possibilities associated with library technology departments such as ETS.

The researchers' initial step was to perform an informal research project to gather examples of ETS activities for potential assessment. ETS members were asked to maintain a weekly journal of activities. Similar "diary" studies have been successfully used with library patrons to better understand information seeking behavior (Xu, Sharples, & Makri. 2011; Lee, Paik, & Joo 2012). Sheble & Wildemuth (2009) in describing the potential of diary studies as a library research methodology note: "Diary methods are more likely to capture ordinary events and

observations that might be neglected by other methods because participants view them as insignificant, take them for granted, or forget them (p. 213). The ETS member activity journals were undertaken to not only capture potentially assessable activities, but to also gain a better understanding of the day-to-day activities staff were performing that might be viewed as “insignificant” but which in reality are a high impact practice of value to library stakeholders. The review of these day-to-day tasks yielded a clearer understanding of what actions were necessary to accomplish projects recorded in the quarterly reports. The initial data from this quick project provided a starting point to uncover the library assessment opportunities within the department.

ASSESS: Assessing the Evidence

While there was a paucity of assessment data readily available in the ETS department, this is not to say there was no evidence to assess. As mentioned in the previous section, a brief assessment project was undertaken to gather and list some of the daily activities of ETS members. These daily activity journals, as well the past two years of departmental quarterly reports offered a body of evidence to evaluate for alignment with library goals and strategic plan. Below is a summary of the data available to be analyzed:

- ETS Quarterly Reports (n=9)
- partial FY2011 to FY2013
- ETS Member Activity Journals (n=9)
- Staff members kept hourly journals for a one week. This activity was performed twice in a 20-week period.
- ETS staff members were asked to note each activity, time spent performing the task, who/what department it impacted, and with whom they may have collaborated to accomplish each task.

These departmental quarterly reports and ETS member journals were analyzed using content analysis to identify activities, tasks, and

accomplishments that aligned with strategic library documents. These documents included the *OSULP Strategic Plan* (Oregon State University Libraries and Press, 2010), the *OSU Learning Goals for Graduates* (Oregon State University Provost, 2010), and the Association of College & Research Libraries (ACRL) *Standards for Libraries in Higher Education* (Association of College and Research Libraries, 2011). These documents were selected because they articulated library and university-wide strategic goals for student learning, technology, and library efficiencies. The data was coded based on four sets of criteria developed from these documents, which yielded sixty codes for the content analysis. These codes were grouped in these general areas:

1. Activities that involved Stakeholders or Collaborators (18)
2. Activities that contributed to *OSULP Learning Goals for Graduates* (7)
3. Activities that contributed to *OSULP Strategic Plan* (4)
4. Activities that related to specific ETS responsibilities in *OSULP Strategic Plan* (11)
5. Activities that met one of the ACRL *Standards for Libraries in Higher Education* (9)
6. Activities that related to specific technology aspects of the ACRL *Standards for Libraries in Higher Education* (11)

These content areas were identified because they contained potential contexts in which assessment could occur to derive impact or value ETS has at a library-wide, campus, and national level. The intended outcome for this content analysis was to identify gaps and strengths within ETS. The ultimate goal was to establish where stakeholder value intersected with ETS projects and services. Problematizing the goal of strategic alignment of ETS raised these specific research questions:

- Where does the ETS department have direct student contact?
 - What areas of the OSULP learning goals are being advanced?
 - How are they being assessed, if they are at all?
- Is the ETS department aligned with the library's needs and strategic plan?
 - What activities demonstrate a contribution to the OSULP Strategic Plan?
- How does the ETS department contribute to library success in terms of national standards of excellence?
 - What activities demonstrate a contribution to the ACRL Standards for Libraries in Higher Education?

The ETS employee activity journals and department quarterly reports yielded 302 excerpts for content analysis. For example, one of the activity journals noted: *"Continue Working on Classroom Build update (Library Faculty)/All classroom users. On and off all day. 4 days"*. This excerpt was coded for the stakeholders this activity impacted, in this case instruction librarians and students as an indirect interaction. This activity was then coded as contributing to the OSULP Strategic Plan goal of Enriching Academic Impact and Educational Prosperity, as well as the ACRL Standards for Libraries in Higher Education principle of educational role. Codes derived from the OSULP Learning Goals for Graduates were only applied if the ETS activity was a direct student interaction. Because the departmental reports did not emphasize this interaction in the OSULP reporting template, there were few ETS activities coded with set.

One initial finding that became apparent during the content analysis was that the departmental reports did not provide an accurate representation of all the activities ETS undertook. Furthermore, the ETS member daily journal exercise was guided by a worksheet without any formal training in how to capture personal activity data. This lack of formal

training resulted in each employee providing differing levels of detail about their daily activities. That said, this evaluation of ETS activities, efforts, and projects was intended to be a starting point for future assessment activities. With that limited goal in mind, this research project was viewed as successful by the ETS department as this study yielded actionable data to inform future decision-making.

AGREE: Agreeing on the Actions

The next stage of the evidence based practice model is agreeing on what the evidence shows and what proposed actions may result from the assembled evidence. In the case of the limited available evidence from the literature review and the data generated in the content analysis of departmental reports and member activity journals, ETS was presented with a variety of results to consider.

Renewed Emphasis on Assessment, Evidence Gathering, and Reporting

One of the major areas of consensus was the need to have more evidence for assessment purposes. This consensus point is the inspiration for this project but it is also demonstrated and reiterated in the lack of available assessable evidence. For example, one of the areas where the researcher knew that ETS had strong direct impact was with student employees. Student employees, after receiving specialized training, are assigned a project that they manage from beginning to end. This type of student engagement, surprisingly, was not adequately articulated or captured in the departmental quarterly reports or daily activity journals. Another example supporting the gap in available local evidence is found in how library space interactions are documented by ETS members in the daily library activities such as in support of various teaching and public services (i.e. computers in the classrooms and labs, printers, scanners, tablet computers, etc.). While time spent on issues relating to library space was "known" by ETS staff, and the

responsibilities themselves were written into the job descriptions of at least three individuals in the department, this hadn't been adequately documented and was seen as "missing" from the ETS content analysis. As a result of this insight, it was agreed that a continued effort to build better evidence-gathering practices and reporting within ETS would be emphasized.

To better articulate ETS's assessment opportunities, a modified logic model was developed based on the outcomes of the content analysis (see appendix). Logic models are used in performance management and program evaluation to clearly lay out an organization's inputs, outputs, activities, and outcomes (McLaughlin & Jordan 1999; Millar, Simeone & Carnevale 2001). Logic models serve to build common understanding, identify priorities, and articulate performance indicators for ongoing assessment (McLaughlin & Jordan, 1999, p.66). The ETS logic model was seen as one way to further identify assessment opportunities and reporting processes. The ETS logic model provided a visual representation of the inputs (money, time, expertise) and outputs (code, project completions) that the department generated. Further, these inputs and outputs were connected both to the stakeholders impacted as well as to the overall intended outcomes articulated in the *OSULP Strategic Plan* such as student success and faculty productivity. The ETS logic model serves as a blueprint to help begin thinking more deeply about the assessments needed to connect what ETS does to the overall outcomes of the library and university.

Embracing Library Outreach and Collaboration

As a result of this study, a number of "I knew this but now we have evidence" moments came to light, such as documenting ETS efforts around supporting library technology. However, the most well documented strategic alignment was around collaborative and outreach ETS activities. Suddenly, there was a major area of documented impact, articulated in the *OSULP*

Strategic Plan and values, University learning goals, and national learning standards that ETS could own and build on. Collaboration is one of the core values of OSULP and is featured prominently throughout the libraries' strategic plan. These collaborative outreach activities were well documented in ETS departmental quarterly reports, and it became clear through the reporting activity, that those projects were also a major part of the day-to-day activities of members of the department. Staff members worked directly with branch libraries and state agencies, as well as collaborating on shared services with other universities. Despite the robust evidence of collaboration and outreach, ETS staff recognized that the quarterly reports were still under-reporting the breadth and depth of the department's activities and impact on stakeholders thus suggesting that there was additional evidence of collaboration and outreach that was still not being documented. Agreement was reached that ETS would build on this newly articulated strength of collaboration and outreach as one way to demonstrate strategic alignment with the library and university, as well as continue to develop ways to gather evidence to support these endeavours.

To better support ETS' strategic alignment with library collaboration and outreach goals, and to further emphasize this role to stakeholders, ETS revamped their mission and vision statements to highlight the collaborative work the department engages in to provide outstanding service and outreach (Oregon State University, n.d.).

Potential Next Steps

At the conclusion of this ETS content analysis project, the researchers agreed that for the data collected to have real impact within the library, it would be useful in the future to undertake a library-wide content analysis of all library department reports as a point of comparison. Such a cross-departmental analysis of departmental quarterly reports would better articulate collaboration across units as well as

impact on stakeholders within the library. Additionally, this kind of library-wide content analysis of reporting might likely uncover other hidden areas of impact such as with collaboration and outreach in ETS, as well as gaps in evidence gathering and reporting.

The researchers concluded that holding a training session in the library about reporting best practices might be one way to address gaps in reporting content. Quarterly reports in the library are inconsistent, and the details reported through those reports differ from department to department. Such a training session would highlight the importance of consistent reporting for evidence gathering as a tool for decision-making and demonstrating strategic alignment to stakeholders. Now that the *OSULP Strategic Plan* has been in place for over two years, a technique like this reporting model offers an easy way to assess effort, impact, and advancement of strategic initiatives. The data collected through reporting exercises like this, could have significant impact on the way that future strategic planning sessions move forward for the library; on how the library conveys its value to university administrators, and can help with fundraising activities though highlighting impact in areas that aren't obvious immediately.

ADAPT: Adapting the Implementation

In the evidence based practice model Booth (2009) proposed, *adapting the implementation* is the final step. This stage acknowledges that local application of evidence based interventions may involve modification, flexibility, and retooling. This step emphasizes that evidence based practices, like library assessment, are iterative. The researchers in this initial examination of ETS embraced this fact, as the gathering of evidence and resulting content analysis were seen as first steps to building a sustainable, flexible, and personalized ETS assessment model. The implementation of suggested outcomes is still a work in progress and will continually be assessed and reassessed as ETS builds their departmental assessment resources and culture.

A content analysis of departmental reports may not be necessary for every library technology unit to undertake, neither may displaying outcomes in a departmental logic model; but the acts of articulating the question, assembling evidence, assessing the evidence, agreeing on outcomes based on the evidence, and finally the adaptation of outcome implementation to local needs suggest a template for all libraries to consider for assessment, strategic fit, and demonstrating value. This final step is about 'owning' the application of your EBP research, or similarly developing and embracing your own assessment process to meet organizational needs. This examination of ETS suggests that an evidence based practices model offers an adaptable research approach to begin iterative assessment activities within libraries.

Conclusion

The possibilities are assessable. The challenge for libraries is to identify these assessment opportunities and take advantage of them as means to gather evidence to support change and convey impact. Demonstrating value to stakeholders and documenting evidence of contributing to a university's mission and strategic initiatives are essential undertakings for all units of an academic library. Bengston and Bunnett (2012) posit that, "Libraries, if they want to be seen as vital, relevant, and positioned as key players in the information handling of the future, must actively engage with technology on every level" (p. 705). Library technology units, such as ETS at OSULP, demonstrate such a commitment. At the same time, the managing of library innovation and technology must also be assessed for value to the organization. As Cervone (2010) reminds us, these efforts must be in "sync" with the parent organization. An evidence based practice research approach offers an engaging and illuminative framework to identify department alignment to strategic initiatives and learning goals. The EBP process proposed by Booth (2009) provides a step-by-step process for library departments, such as ETS, to begin gathering and assessing evidence

Table 1

Application of the EBP Process (Booth, 2009) to the ETS Department

EBP Model	Emerging Technologies & Services Department
Articulate the Question	What intersections does ETS have with stakeholders? Where/How is ETS impacting student learning? Where/How is ETS advancing the library's strategic plan? Where/How is ETS contributing to meeting national library standards?
Assemble the Evidence	Strategic Documents Departmental Reports Weekly Activity Journals Literature
Assess the Evidence	Content Analysis of Department Reports Content Analysis of Activity Journals
Agree on the Actions	Renewed Emphasis on Assessment, Evidence Gathering, and Reporting Embracing Library Outreach and Collaboration
Adapting the Implementation	Results from evidence gathering to inform future ETS assessment activities.

of impact and value (see Table 1). In this project's instance, the first step was a self-assessment of departmental impact and potential impact areas. This self-reflection proved invaluable resulting in refocus of the department's mission and re-emphasis on developing new assessment practices and reporting.

The evidence based practices framework provides libraries with guidance, as well as with a suggested research process in gathering evidence that may inform library-wide assessment practices. Kloda (2013) sees a clear connection between assessment and evidence based practices as iterative cycles that support rigorous inquiry and change.

Most academic libraries want to be innovative in their practices and culture. Innovation is desired across many library departments but is especially embedded in library technology units. Bengston and Bunnett (2012) note, "Organizations that wish to support innovations cannot hope to do so by merely stating that they support innovation or by inviting their employees to innovate" (p. 700). Library

assessment and evidence gathering are key to conveying innovation, as well as identifying and marketing contributions to student success or organizational mission. The EBL process offers a robust framework for project management, iterative development, and collaboration engagement for identifying and developing assessment opportunities. The possibilities are, indeed, assessable. Libraries only need to build evidence-gathering processes within their ongoing activities and efforts in order to realize this opportunity in full.

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