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***Start Making Sense: Practical Approaches to Outcomes Assessment for
Libraries***

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Abstract

Traditionally, libraries attempted to prove their effectiveness by reporting the number of resources the library bought or subscribed to, of instructional sessions taught, and of reference questions answered, among other statistics. However, libraries are increasingly expected to document student achievement using outcomes assessment. After struggling with outcomes assessment at our own institution for several years, we have found that the most effective way to handle program-level and classroom-level outcomes assessment is to create manageable, realistic assessment tools. In this paper, we describe two assessment tools that have worked for us: a brief survey given to a large number of students and an in-depth, multi-part tool used with a limited number of library instruction sessions.

Start Making Sense: Practical Approaches to Outcomes Assessment for Libraries

Introduction

Accreditation associations and state boards across the nation have always demanded that colleges and universities prove they are providing students with quality education. Libraries, as part of academia, have also been accountable. Traditionally, quality was measured in terms of inputs; for libraries, that meant collecting data that focused on the number of books the library bought, the number of instructional sessions offered, the number of reference questions answered. However, organizations such as the National Association of State Universities and Land Grant Colleges no longer accept inputs as a measure of accountability. The focus is now on outcomes, specifically outcomes assessment.¹ In fact, the North Central Association of Colleges and Schools (NCA), the accrediting body for our institution, now requires that student achievement be documented using outcomes assessment.² Although gathering input measures is a fairly straightforward activity, assessing student outcomes can be problematic for libraries for a number of reasons that we will discuss shortly.

First, however, we need to distinguish assessment from evaluation, which may be more familiar to many readers. While evaluation involves rating the performance of services, programs, or individual instructors, outcomes

assessment concentrates on what students are learning from the program. The assessment process consists of stating the knowledge and/or skills that the program aims to teach, then measuring whether students can demonstrate that knowledge or those skills after receiving instruction. The focus is on what was learned, not what was taught. If the students are learning the desired knowledge and skills, then the teaching is effective; if they are not learning, it is not effective, and something must be done to improve the learning environment. Student assessment is important to libraries not only as a means to meet accreditation requirements but also because it has the potential to truly improve the quality of instruction.

The assessment process can be described as a cycle of continual improvement, in which assessors

- state outcomes
- collect data that measures student learning
- analyze data and compare to outcomes
- make changes necessary at any point in the process to improve results, and
- repeat assessment cycle

Changes could include improving instructional methods to increase student learning, revising outcomes to be more realistic or more easily measured, or developing new data collection methods to be less onerous or more directly linked to the outcomes being measured. The assessors should be learning what works and improving it, what doesn't work and changing it.

As we stated in the beginning, outcomes assessment can be problematic for libraries. Libraries do not offer a degree and do not have majors enrolled in a degree program. There is no predetermined, limited-size group of students to assess. Further, librarians do not have steady contact with the same students over a period of years, with the many opportunities for instruction that would imply. Librarians are generally responsible for teaching the whole campus but have only hit and miss contact with any given student. Additionally, library instruction is not systematic because the need for library research skills varies widely from discipline to discipline.

Over the past four years, we at Bowling Green State University (BGSU) have tried a number of assessment methods, some useful and some not so useful for various reasons. In this article, we will describe some assessment strategies for both program-level and classroom-level assessment that we are finding to be effective.

Background

As a result of NCA requirements, every program and college at BGSU must assess student learning, and the library is no exception. The library has been involved with program-level assessment since 1995. In the fall of 1997 we began to develop assessment at the classroom level as well. For the first three years the library's Student Achievement Assessment Committee (SAAC) conducted

and oversaw all the library's assessment efforts. Since that time the committee has been phased out, although the post of Assessment Chair remains. At this writing, the various departments within the library have become responsible for assessing student learning within their own instructional programs while assessment of the library's program as a whole is the responsibility of the Library User Education Coordinator and the Assessment Chair. Throughout this process, we have had three different Library User Education Coordinators, two SAAC chairs, and a committee membership that has changed from year to year. The present Library User Education Coordinator and Assessment Chair, the authors of this paper, have learned from the experience of our predecessors and built on their work to develop the current assessment program.

Currently, we are required to assess at both the program and classroom levels. The library instruction program at BGSU is multi-faceted, including in-person, point-of-need, and online instruction. In-person instruction consists of reference desk help, course-related instruction, and hour-long one-on-one appointments with librarians; point-of-need instruction includes research aids, finding aids, and how-to-use guides; online assistance includes tutorials, email reference, research aids, and a wide variety of instructional material available from our Web pages. The part of our library instruction program that allows us to reach the greatest number of students is the course packet for English 112, a freshman composition course required of most students. Although students do not have scheduled library instruction for this course, materials written by BGSU librarians

are part of each student's course packet. These include an exercise on electronic resources and a self-guided tour of the library, which gives students a general idea of the first floor layout, explains search strategies, and familiarizes them with the online catalog and research databases.

To begin our assessment process, we developed outcomes for the overall instructional program that reflect what we believe students graduating from BGSU should know about using the library (see Appendix A). They cover the most basic information we aim to teach at the instructional points described earlier, and they can be measured using somewhat objective standards. These program-level outcomes have evolved over the years as we have discovered what is practical, both in terms of what can be taught and what can be measured. For example, one of our original outcomes stated that students should be able to locate materials on the shelf using a call number. In practice this proved to be vexatious to measure, as it involved accompanying students to the stacks to determine whether they were not able to locate a book or whether it was simply missing. This outcome was revised to state that a student should be able to recognize a call number, which could be measured with a survey question.

In the first part of our paper, we will describe the survey we used for assessing our program-level outcomes campus-wide, and discuss the initial results. We will discuss our multi-part approach to assessing individual library instruction sessions in the second part of our paper.

Part I: Program-Level Assessment

The student library skills assessment survey – dubbed the mini-quiz – was designed to assess program-level outcomes on a fairly large scale. The mini-quiz is short, simple, and easy to complete in about five minutes. Multiple choice and matching questions were written to test some aspect of each program-level outcome. Although we felt that most students would be able to complete the mini-quiz easily, it would still point out problem areas if large numbers of students missed any given question. It would also provide points of comparison between the different groups that we planned to study.

The mini-quiz consists of nine multiple choice and matching questions (see Appendix B) designed to test whether students

- are aware of the options for getting materials not available at BGSU, specifically through OhioLINK, our statewide consortium that provides user-initiated online borrowing
- can recognize a Web address, a book citation, a serial citation, and a call number
- know how to use the operators AND and OR
- know when to use the library catalog and when to use an index
- know the difference between primary and secondary sources
- know the difference between popular and scholarly journals
- think they will use libraries after graduation

- think library skills will be useful in their chosen profession

Previous surveys were taken in 1996 and 1997. Both versions were fairly rigorous and in-depth, expecting students to supply information by filling in blanks; both took about twenty minutes to complete. The former surveys also tried to demonstrate that learning had taken place specifically through the library's instructional programs. However, with no "captive audience" to which the surveys could be given, the committee was forced to rely on volunteer participants, who were understandably hard to come by. Despite valiant efforts by committee members, the survey samples were too small to be valid.

Without the possibility of widespread in-depth testing, we found it necessary to relax our standards for acceptable evidence. Multiple choice and matching questions, while yielding less rigorous evidence, were easier to administer and score on a large scale. Also, attempts to prove that the learning had taken place in the library had to be abandoned. The students may have learned their skills in another class or even before they came to college, but as long as they had them before they graduated, we would have to be satisfied. The ACRL Task Force on Academic Library Outcomes Assessment Report supports this decision. The Task Force states that significant changes in library users' knowledge can be measured and "their relationship to resource inputs and program inputs can be meaningfully determined through careful and lengthy research." However, for the purposes of accrediting agencies' requirements, "such rigor is not necessary to produce meaningful results."³

Methodology

Since it would take only five minutes for students to complete the mini-quiz, it was not difficult to persuade the coordinator of a fifteen-section general education course to allow it to be distributed to the instructors in her charge. About half of these instructors agreed to give the mini-quiz to their students. Additionally, instruction librarians agreed to give the mini-quiz to three large Library User Education sessions as well. This distribution plan gave us our “captive audience” and resulted in 414 returned surveys. The sample included undergraduates of every level, including 183 first year students (44%) and 96 fourth year students (24%). One hundred ninety-six students (47%) had attended an Library User Education session, and 319 (77%) had completed English 112.

Results

Students as a whole did quite well on most parts of the mini-quiz. Ninety percent or more of all students taking the mini-quiz were aware of the options for getting materials not available at BGSU (question 1); could recognize a Web address, a book citation, a serial citation, and a call number (question 2); knew how to use the operator AND (question 4); and knew the difference between popular and scholarly journals (question 7). Eighty-six percent of respondents plan to use some type of library after graduation while 77% believe that library skills will be useful in their chosen professions (question 9).

Students did not do as well in some other areas, however. Respondents were asked to identify whether each of five types of information would be found in a catalog or an index (question 5). Correct responses for each item ranged from 65% to 74%. From 57% to 90% of respondents were able to correctly identify each of six primary and secondary source materials (question 6). The most troublesome item proved to be question 3, concerning the OR operator. Only half of the respondents realized that a search using OR would retrieve more results than the same search using AND. Although the survey showed that students were grasping the use of AND, the use of OR did not seem to be accompanying it.

Comparisons were then made between three pairs of results: first year students and fourth year students; students who had taken freshman composition (English 112) and those who had not; students who had attended Library User Education sessions and those who had not. In this way we hoped to see where our influence lay most strongly. This could also show that the library had some effect on student learning, even if it didn't prove that the library was solely responsible for the learning. A T-pairs test was used to determine whether there was a significant difference in the numbers of students giving the correct response in each of the three comparisons. Significant differences are reported below. Since relatively few differences were statistically significant, differences of at

least five percentage points are noted as somewhat important or as tendencies when they formed a pattern with the statistically significant differences.

The largest differences were found between those who had taken English 112 and those who had not. As we mentioned earlier, the English 112 library instructional packet is the way that we reach the greatest number of students, so we were especially interested to see whether we were having any impact on these students. Those who had completed English 112 were significantly better at identifying call numbers and citations and at identifying the characteristics of popular and scholarly journals. They tended to be better at identifying the types of information to be found in a catalog as opposed to an index. They were also somewhat better at using the operator OR; in fact, those who had not taken English 112 had the lowest score of any group on this question (42%). These are all points that are emphasized in the English 112 library instructional packet.

Differences between those who had attended Library User Education sessions and those who had not were not as great as expected. Library User Education attendees were significantly more aware of OhioLINK as a source for materials not available in our library, and they also were somewhat better at identifying the types of information to be found in a catalog as opposed to an index. On the other hand, they were no better than those who had never attended an Library User Education session at recognizing a book citation, a serial citation, or a call number, and were actually significantly worse at recognizing a Web address

(although both groups were very high). They also fared no better at using the operators AND/OR. Both groups did well on identifying the characteristics of popular and scholarly journals.

One reason for the lack of more significant differences between those who have attended Library User Education sessions and those who have not could be a problem in the self-reporting of attendance. A large number of those whom we know actually had attended a session (because the mini-quiz was handed out to them immediately following an Library User Education session) still reported that they had never attended a session. Although we corrected these surveys, an unknown number of the general education students who took the mini-quiz may also have reported that they never attended an Library User Education session, when in fact they had.

Much of the basic, formal library instruction given to all students comes early in their college careers, as most students take English 112 in their first or second year. Instruction given to other classes is unsystematic, in that the type and amount of instruction varies widely from discipline to discipline and from instructor to instructor within a discipline. We wanted to compare the scores of first and fourth year students to see whether library instruction had a cumulative effect as the years went by and also to see if students still remembered what they had learned by the time they were preparing to graduate.

Undergraduates in their fourth year or beyond were significantly better at identifying primary and secondary sources than were first year students. They also tended to be better at recognizing citations, and using AND and OR correctly. Fourth year students had the highest score of any group studied for using OR correctly (62%). First and fourth year students fared about the same on the rest of the questions – awareness of OhioLINK borrowing, using indexes or the catalog, and identifying the characteristics of popular and scholarly journals.

Two significant differences were noted in the responses to the final two questions about use of the library after graduation. Library User Education session attendees were significantly more likely to believe that library skills would be useful in their chosen professions, while those who had completed English 112 were somewhat more likely to believe so and to plan to use some type of library after graduation.

Future changes as a result of the mini-quiz

We will be making various changes in our assessment methodology and in our Library User Education program as a result of the mini-quiz. The questions will be reviewed carefully to determine whether they are producing the most meaningful results possible. The question dealing with indexes/databases and the catalog in particular will need to be revised to reflect the increasingly ambiguous line between the two types of resources. There seems to be an

exception to every statement that could be made about the types of information to be found in either the catalog or the other databases now that we have access to so many different electronic resources, many including full text materials and information about local holdings.

Certain ideas that gave students difficulty on the mini-quiz will need to be approached differently in future instructional sessions and in the English 112 course packet. Librarians should bear in mind the ambiguity between research databases and the library catalog when planning how they will teach the differences between the two, to ensure that they present this topic clearly. The use of the Boolean operator OR also needs to be emphasized more strongly and clearly in the future. The Library User Education Coordinator is developing a new explanation of Boolean operators to be used in the English 112 course packets and on the Library User Education Web pages. Librarians would do well to cover basic book and journal citations and how to recognize them. Some concepts, however, simply cannot be adequately addressed in the typical Library User Education session. Librarians should continue to teach the identification of primary and secondary sources in the sessions given to upper division classes in appropriate disciplines, but we cannot expect the general student body to absorb this idea from basic Library User Education sessions.

The survey seemed to show that the English 112 course packet is our best chance to have a large-scale effect on student learning. We reach the largest

number of students through this course, and it seemed to most strongly effect whether a student did well on the mini-quiz. The packet was revised for the fall of 1999, and we are planning to focus our attention on developing an assessment tool specifically for this course.

Part II: Assessment at the Class-level -- One-shot Library Instruction

Sessions

Though by no means our entire focus, course-related, one-shot library instruction sessions are a significant component of our Library User Education program. We teach approximately 100 sessions throughout the academic year to graduate and undergraduate students, on subjects ranging from business administration to women's studies. Teaching faculty appreciate such assistance since it is becoming increasingly difficult for them to keep up with changes in library resources. Because our librarians devote substantial time and energy to these sessions, it is essential that we attempt to assess our impact on student learning, discovering what works and does not and modifying our instruction methods based on our findings.

One advantage to one-shot sessions is that librarians have captive audiences; however, they must contend with other problems when assessing. These sessions are designed to help students in specific courses with specific assignments. Since librarians work with students in various disciplines and at all stages of their academic careers, the content and, therefore, the outcomes vary

greatly from session to session. This variety makes it impossible to create one assessment tool suiting the needs of all classes.

Another problem is time. It is difficult enough to cover all the necessary material during a session without including an assessment tool, however brief. And it takes considerable time and effort to develop a meaningful tool and then interpret its results. Most of the Library User Education librarians at BGSU teach approximately ten to fifteen sessions per semester, the majority of which occur in the first few weeks of the term. These sessions do not occur at predictable, even intervals throughout the semester.

Furthermore, librarians conducting these sessions function in the role of guest lecturer, performing a service for the teaching faculty member. The librarian has little control over the assignment created by the instructor, and on occasion the librarian may not know exactly what the assignment is. Because they are functioning in this guest capacity, it may be difficult for librarians to understand how the assignment fits into the course and also to make demands on the instructor, especially if the librarian is working with an instructor for the first time.

We have developed an effective approach to assessment after some trial and error. Rather than using the same brief, generic tool in all classes, we have implemented a more extensive, course-specific tool administered selectively. The tool, consisting of four parts, gathers information from students, the course

instructor, a peer librarian, and the instructing librarian. Each Library User Education librarian must assess at least one session per semester. As a result, because we collect information from multiple perspectives, we are able to contend with the complexity of teaching one-shot sessions without making excessive workload and time demands on the participating students, faculty members, and librarians.

Our assessment tool, using various information-gathering techniques, includes post-tests exploring what students learned as well as surveys given to students and course instructors at the end of a session to see if the appropriate material was presented. Also included are a peer-assessment and a self-assessment. According to Adams, these same techniques are often used to evaluate the performance of an individual instructor. They can, however, be employed in outcomes assessment if the results are used to investigate whether a session has changed students' knowledge as well as whether the session has met their needs.⁴ By administering this tool, we do not intend to single out instructor performance; rather, we intend to improve our instructional methods, increase our understanding of student learning, and find ways to improve our instruction and overall program.

The Assessment Tool

While portions of the tool can be used in all sessions, certain parts of the tool, specifically the one given to students, must be tailored to measure the outcomes

established for the class being assessed. Of course, librarians need to state their learning outcomes before they teach the session in order for the process to work.

A more detailed description of the four-part tool follows, and a sample administered in one of our sessions is included in Appendix C.

- **Student Assessment.**

The portion of the assessment tool directed to students has two parts. The first, a post-test consisting of at least five questions, attempts to measure the students' understanding of the main concepts presented in a session. Because the content of one-shot sessions varies so greatly from one session to another, librarians are responsible for creating questions based on *important* concepts they covered, which should reflect the outcomes they have established. This is the portion of the tool that the librarians must create on their own, though they are given sample questions to model. In this part of the assessment tool, we hope to go beyond students' perceptions, by gathering more concrete evidence about their learning. The post-test helps librarians explore whether students actually learned rather than whether the students thought they learned in the session.

The second part is more subjective, consisting of at least two open-ended questions asking students which aspects of the session they found effective or

ineffective. Librarians were required to ask the participating course instructor in advance if the student part of the assessment tool could be given at the next class meeting, in case time ran short during the actual session.

- **Faculty Assessment**

The faculty member teaching the course is asked to respond to questions about how well the session met the class's needs. The course instructor has more contact with the students than the librarian does and understands the class assignment the students have been given. The instructor should thus have a clear impression of whether the students came away from an Library User Education session with a working knowledge of the concepts that were covered.

- **Peer Observation**

Each librarian invites a peer to observe the Library User Education session that he or she is presenting, and the peer is asked to complete a questionnaire about the session. Other librarians are familiar with the difficulties of teaching such sessions that result from time constraints and the complexity of the material. Peer comments can give Library User Education librarians valuable information that can be used to improve their instructional technique. In addition, the observer is introduced to another librarian's way of explaining material and running a class. Thus, the librarians have an opportunity to help each other develop their teaching skills.

- **A Self-Assessment**

To complete the fourth and final step of the assessment project, each participating librarian writes a self-assessment based on the student and faculty assessment results, the peer observation, and the librarian's own perception of the session. Self-reflection encourages librarians to consider how and what they teach as well as how they can improve.

Ensuring Cooperation

We experience a high level of cooperation among the librarians participating in assessment of one-shot sessions because we tried to eliminate the concerns librarians expressed. Assessment is time-consuming, so librarians are asked to use the four-part tool with only one class per semester. Each librarian chooses a class and instructor to work with, often selecting a faculty member with whom there is a previously established working relationship. To allay concerns that potentially negative comments could be used in evaluations, librarians are assured that the data collected during the assessment process will be kept separate from individual librarians' annual evaluations and tenure portfolios. The Library User Education coordinator reads through the results, but the materials are returned to the individual librarians and remain their individual property. In addition, each librarian asks a colleague with whom he or she feels comfortable to serve as a peer observer, in order to relieve some of the stress related to being observed.

Establishing Best Practices

ACRL tells us that “outcomes should be related back to inputs wherever possible, in order to identify and establish 'best practices.'”⁵ Keeping this guideline in mind, we have used the results of our four-part assessment tool administered in spring and fall 1999 to look for ways to improve our one-shot sessions. The responses gave us the opportunity to start a dialogue among the Library User Education librarians about issues related to teaching one-shot sessions and to become more thoughtful, insightful instructors, choosing to teach particular ways, for particular reasons. Our meetings have become workshops during which we attempt to reach common understandings and establish "best practices."

Our one-shot session assessment confirmed that most students do not understand Boolean operators, supporting the conclusion that we need to address this concept in greater detail. Another result of assessment was the creation of a handout offering tips to instructors, which suggests what the classroom instructor can do before, during, and after an Library User Education session to help students get the most out of it. Based on our discussion, we found, for example, that our best sessions occur when the class instructor interacts with the librarian during the instruction session, emphasizing to the students how the information relates to the assignment and which information is particularly important. Librarians are not often able to supply this point of view on their own. Some course instructors may not do this because they think interrupting the librarian is rude, when in fact librarians at BGSU unanimously

believe such interactions often greatly improve a session. These tips are currently posted on our Library User Education Web site available at <<http://www.bgsu.edu/colleges/library/infosrv/lue/luehome.html>>. When course instructors schedule a session, librarians can refer them to this Web page detailing our suggestions.

In addition we have discussed such issues as preparing for a session, deciding whether to do a demonstration or a hands-on session, creating class Web pages, developing sample searches, and finding ways to explain difficult concepts like the differences between keyword and subject searching. The results of our discussions have been drawn up into outlines and posted to the Library User Education Web page at <<http://www.bgsu.edu/colleges/library/infosrv/lue/sourcebook.html>>. When preparing for a session, librarians can consult these teaching resources online to refresh their memories and get new ideas.

Conclusion

Although outcomes assessment is problematic for libraries in many ways, the results can be worth the effort. Building on the work of the library assessment committee and guided by the ACRL Task Force recommendations, we have started to make sense of assessment. By working to establish “best practices,” we learned to set manageable outcomes, design tools to measure our outcomes,

and modify our instruction and program based on the information gathered with our assessment tools.

For instance, we are now more familiar with which concepts our students do not understand and are working on ways to explain these concepts more effectively. Although we have often felt that students did not understand concepts like Boolean operators, we now have concrete evidence to support such impressions. In addition, we have created a better line of communication with class instructors by developing a handout of tips for improving course-related library instruction, based on our discussion of what usually happens during our best one-shot sessions.

Our assessment efforts have also helped us realize that certain aspects of our program need more attention. While results of assessment indicate that we are well connected to first-year students, providing them with a solid start, we do not have an effective strategy to work with students throughout their academic careers. We have a positive impact on first-year students because of our established relationship with the English 112 program; instructors are expected to incorporate materials created by librarians into their classes. However, at this point, continued library education throughout students' academic careers depends mostly on students' individual efforts and whether or not they have an instructor who takes advantage of our LIBRARY USER EDUCATION program. We need to work on ways to incorporate sustained, systematic library instruction

into the curriculum. Our options include becoming more involved with general education courses required of all students regardless of their disciplines and to integrate discipline-specific instruction into capstone courses, the final courses students take in their majors before graduating. Integrating library instruction into the general education curriculum and capstone courses will require extensive collaboration with administrators and faculty members across campus.

Above all, we have learned that developing manageable, realistic assessment tools is the best way to start making sense of assessment.

References

1. Association of College and Research Libraries, "Task Force on Library Outcomes Assessment Report," 27 June 1998, <<http://www.ala.org/acrl/outcome.html>> (31 July 1999).
2. For a discussion about accreditation and assessment, see Celia L. Lopez, "Assessment of Student Learning," *Liberal Education* 84.3 (Summer 1998), 36-43.
3. Association of College and Research Libraries, "Task Force."
4. Mignon S. Adams, "Evaluation," in *Sourcebook for Bibliographic Instruction*, edited by Katherine Branch et al., (Chicago: ACRL Bibliographic Instruction Section, 1993), pp. 47-49.
5. Association of College and Research Libraries, "Task Force."

Appendix A

Program-Level Outcomes

Appendix B

Mini-Quiz

Appendix C

Four-Part Assessment Tool for One-Shot Sessions